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Notes on the Genus *Scaphidium* OLIVIER of China with Description of a New Species (Coleoptera: Staphylinidae: Scaphidiinae)

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Abstract A new species of the genus *Scaphidium* collected from Zhejiang Prov. and An'hui Prov. is described under the name of *Scaphidium biwenxuani* sp. nov. and its diagnostic characters are illustrated. *Scaphidium comes* (recorded from Zhejiang Prov.) and *S. grande* (recorded from Yunnan Prov., Fujian Prov. and Guangdong Prov.) are recorded from the mainland of China for the first time.

Key words Coleoptera, Staphylinidae, Scaphidiinae, *Scaphidium*, new species, new record, China.

The genus *Scaphidium* OLIVIER, 1790 is a large genus of subfamily Scaphidiinae (LATREILLE, 1807). Up to the present, at least 325 species of the genus have been known from the world (LÖBL, 1997; HOSHINA and MORIMOTO, 1999; FIERROS-LÓPEZ, 2005) and 35 from China.

In general face, *Scaphidium* as well as other genera of Scaphidiinae are quite easy to be distinguished from rest genera of Staphylinidae by the box-like and highly convex body form, with the elytra covering the abdomen, but not the flexible staphylinoid body form. To compare with the relative genera of Scaphidiinae, this genus can be distinguished by the combination of following characters: robust species; head retracted under pronotum; eye notched; segments of antennal club symmetrical; scutellum large and visible; procoxal cavities closed posteriorly; base of elytron impressed to receive extended basal angle of pronotum; centre of metasternum pubescent in male; mesosternal keel bifid basally.

Recently, we examined a lot of specimens belonging to the genus *Scaphidium* in our collections. And among them, one new species, which is described here, and two new records from P. R. China are recognized. Since the *Scaphidium* species of P. R. China have been well revised by I. LÖBL in his excellent work at 1999, we insert these three species to his key (marked as #) for facilitating the identification.

All the type specimens are deposited in SHNU (Department of Biology, Shanghai Normal University). Other materials treated in this study were deposited in SHNU and SEM (Shanghai Entomology Museum, the Chinese Academy of Science).

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Scaphidium biwenxuani sp. nov

(Figs. 1, 4–8)

Holotype: ♂, Longwangshan, Anji County, Zhejiang Prov., alt. 950–1,200 m, 25. IV. 2006, BI Wen-Xuan and TANG Liang leg.

Paratypes: 5♂♂, 2♀♀, same data as for the holotype; 1♂, 1♀, Mt. Tianmu, Lin'an City, Zhejiang Prov., alt. 1,100 m, 24. VIII. 2006, BI Wen-Xuan and TANG Liang leg.; 4♀♀, Guniujiang, An'hui Prov., alt. 950–1,050 m, 28. IV. 2005, HU Jia-Yao and TANG Liang leg.; 1♂, Mt. Tianmu, Lin'an City, Zhejiang Prov., 18. V. 2007, WU Yong-Xiang leg.; 1 ex., Mt. Tianmu, Lin'an City, Zhejiang Prov., alt. 100 m, 15. VIII. 2007, HUANG Hao leg.; 1ex., Mt. Tianmu, Lin'an City, Zhejiang Prov., 2. VIII. 2007, SONG Xiao-Bin leg.

Description: Coloration. Male and female: head dark reddish brown. Antennae (Fig. 4) segments I–VI dark brown, antennae VII–X black, XI slightly lighter than the former four segments. Pronotum with two longitudinal black fasciae, while the remaining surface of the pronotum reddish brown. Each elytron with two round, black basal spots: one humeral spot and one spot near the suture, and with one "∞"-shaped median fascia and one apical fascia while the remaining surface of the elytron yellowish brown. Exposed abdominal tergites reddish brown. Prohypomera black mostly with yellowish brown laterally. Prosternum, mesosternum and metasternum black. Abdominal sternite I black to dark reddish brown apicaridly, and the remaining sternites reddish brown. Femora and tibiae very dark brown, tarsi light brown.

Frons and vertex finely and sparsely punctate, frons at narrowest point between eyes 0.18 mm (holotype).

Pronotum not raised above elytra, weakly inflexed anteriorly, with lateral edges slightly sinuate; discal punctation almost evenly fine and sparse, similar to that on frons, consisting of shallow punctures; antebasal puncture row impressed, not interrupted at middle.

Elytra weakly convex, humeral area slightly raised; discal impression absent, disc slightly impressed apically, adsutural area flat and impressed; discal punctation very fine and sparse on large inner portion, much sparser than pronotal punctation, obsolete on lateral area; each elytron with 3 discal puncture rows, which are almost equal in length; sutural stria puncture row relatively fine, basal stria row deeply impressed, with punctures much coarser than those forming pronotal antebasal row.

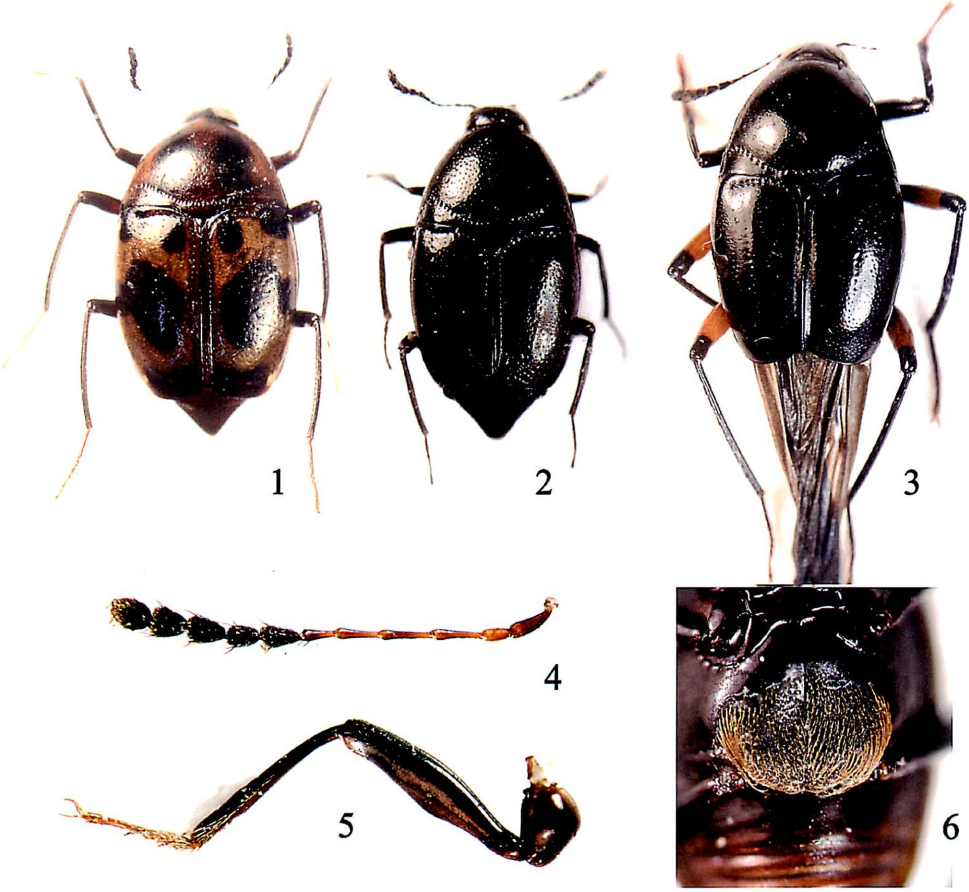
Prohypomera even, without microsculputre, black in most inner portion, brown lateral edges.

Mesepisterna very finely punctate.

Exposed abdominal tergites very finely punctate and with microsculpture consisting of punctures. Centre of sternite I with microsculpture consisting sparse punctures, lateral portions without mesh-like microsculpture.

Legs (Fig. 5) long, mesotibiae and metatibiae curved.

Aedeagus and male sexual characters: Metasternum (Fig. 6) impressed in middle, with short lodged pubescence, and two long lateral setal tufts. Profemora with ventral side cornuted on basal third portion with ridge. Protibiae even, hardly sinuate. Aedeagus (Fig. 7) 1.46–1.47 mm long. Median lobe subparallel posterior basal bulb, with tip angular and inflexed. Parameres slightly sinuate, almost evenly wide. Internal sac (Fig. 8) with apical complex of sclerites: one apical insert, one transverse X-like complex, two large comma-like sclerites and one transverse



Figs. 1–6. *Scaphidium* spp. — 1–3, Habitus; 4, antenna; 5, male front leg in ventral view; 6, male metasternum; 1, 4–6, *S. biwenxuani* sp. nov.; 2, *S. comes*; 3, *S. grande*.

membrane, three couples of clubs.

Length: 5.0–5.5 mm.

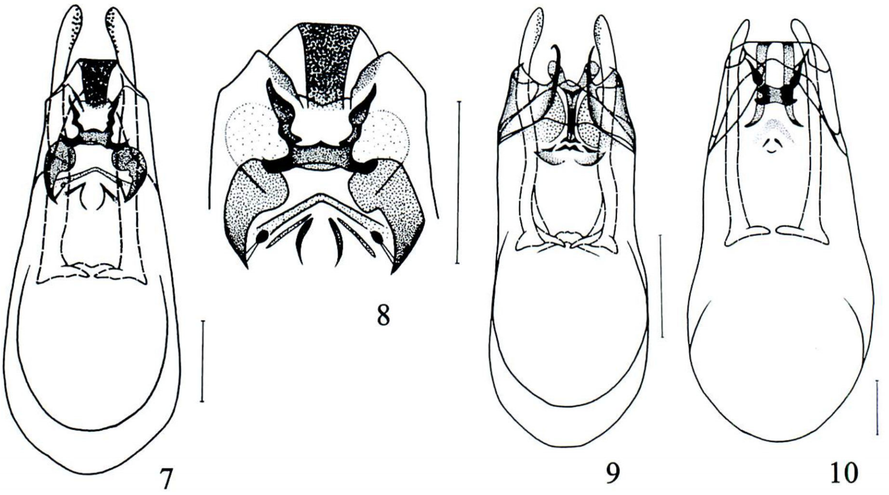
Distribution: China (Zhejiang, An'hui).

Remarks: This species is similar to *S. takahashii* MIWA et MITONO (China, Taiwan), from which it differs by the following points: 1. pronotum without spots on lateral portion, while in *S. takahashii* it bears two spots on lateral portion of pronotum; 2. elytra with apical fascia while in *S. takahashii* with subapical fascia.

In the key of LÖBL 1999, this species should be placed at # 10 and can be distinguished from *S. formosanum* by spots pattern on elytra: each elytron with two basal spots, one "∞"-shaped fascia on median portion and one apical fascia while in *S. formosanum* it with one humeral spot, three separated spots on median portion and one apical fascia.

Fascia variation is widely occurred in the genus *Scaphidium*, but it is undiscovered in *S. biwenxuani* sp. nov. presently.

Ecology. The specimens of this species are mainly captured under the bark of decayed



Figs. 7–10. *Scaphidium* spp. — 7, 9, 10, Aedeagus in dorsal view; 8, internal sac in detail; 7–8, *S. biwenxuani* sp. nov.; 9, *S. comes*; 10, *S. grande*. Scales = 0.25 mm.

wood.

Etymology. This species is named in honor of Mr. BI Wen-Xuan, who collected some specimens used in this study and helped us a lot in field work.

Scaphidium comes LÖBL, 1968

(Figs. 2, 9)

Materials examined. 1♂, 5♀♀, Tianmushan N. R., Anji County, Zhejiang Prov., alt. 350 m, 1. V. 2006, WU Yong-Xiang leg.

Distribution. North Korea; China (Zhejiang).

Remarks. This species was originally described from Korea and was newly recorded from China. In the key of LÖBL (1999), this species should be placed at # 3 and can be distinguished from *S. fukiense* from following points: 1, *S. comes* with tarsi and I-VI antennal segments brownish while in *S. fukiense* body, antennae and legs (including tarsi) entirely black; 2, head, pronotum and elytra with punctation dense and close while in *S. fukiense* bears one discal row of coarse punctures; remaining discal punctation obsolete; pronotal punctaion very fine; 3, prohypomera uneven, with microsculpture consisting of coarse and dense punctures while in *S. fukiense* smooth and without impressions; 4, sternite I with microsulpture consisting of obvious punctures on the most large median potion and even coarser and denser on the outboard portion while in *S. fukiense* sternite I extremely finely punctate, without microsculpture.

Scaphidium grande GESTRO, 1880

(Figs. 3, 10)

Materials examined. 1♂, Manfei, Nabanhe, Yunnan Prov., alt. 630 m, 29. VII. 2005, LI Li-Zhen and LI Jin-Wen leg.; 1♂, Jinghong, Yunnan, 11. VI. 1975, JIN Gen-Tao leg. (No. 24038143, SEM); 1♂, Xiyang, Yong'an, Fujian Prov., 19. IV. 1962, JIN Gen-Tao leg. (No. 24110832, SEM); 1♂, Waterfall group, Nanling N. R., Guangdong Prov., VII. 2006, WANG Zi-Chen leg.; 1♀, Mt. Wuyi, Fujian Prov., 27~31. V. 2002, LI Li-Zhen leg.; 1♀, Beifeng, Fuzhou city, Fujian Prov., V. 2004, LI Min leg.

Distribution. China (Taiwan, Yunnan, Guangdong, Fujian); India (Sikkim, Darjeeling District); Nepal.

Remarks. This species is newly recorded from China mainland, which was original described from China (Taiwan), India (Sikkim, Darjeeling District) and Nepal. As mentioned in LÖBL (1992) page 489, "This is a rather variable species, especially in size and elytral punctation." In this study, the length of examed specimens: 5.8–7.8 mm. In the key of LÖBL (1999), this species should be placed at #3, which can be easily distinguished from *S. fukiense* by wide reddish fascia on meso- and metafemora while body and the other portion of legs uniquely black.

Acknowledgements

We would like to express our sincere gratitude to Dr. I. LÖBL (Switzerland) for kindly sending related papers to us, to Prof. LIU Xian-Wei (SEM) for kindly loaning specimens to us, to following friends as well who provided material from their collections: Mr. HU Jia-Yao (SHNU), Mr. WU Yong-Xiang (Shanghai), Mr. WANG Zi-Chen (Guangzhou), Mr. LI Min (Fuzhou). Our special thanks are due to Mr. BI Wen-Xuan (SEM), who continously helps us in field works, photography and many other ways.

要　　約

何　文佳，湯　亮，李　利珍：中国産 *Scaphidium* デオキノコムシ属覚え書き．———浙江省及び安徽省から新種 *Scaphidium biwenxuani* を記載し，さらに中国本土から，*S. comes* LÖBL（浙江省），*S. grande* GESTRO（雲南省，広東省，福建省）を新たに記録した．

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Notes on Elaterid Beetles (Coleoptera: Elateridae: Agryprinae) from Southeast Asia (II)
Two New *Cryptalaus* from Sulawesi, Indonesia

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Abstract Two new species of elaterid genus *Cryptalaus* ÔHIRA, 1967 are described and illustrated from Sulawesi, Indonesia, under the names of *C. rakuda* and *C. watarusuzukii*.

The elaterid genus *Cryptalaus* ÔHIRA, 1967 was established based on *Alaus putridus* CANDÈZE, 1857 as the type species. At present a lot of species are known from the Oriental and Australian Regions.

During the course of my study on elaterid beetles from Southeast Asia, I found a very strange-form species belonging to the genus *Cryptalaus* from Sulawesi, Indonesia. I had also an opportunity to examine another closely allied species from the same Island through the courtesy of Dr. Wataru SUZUKI. After a careful examination, it has become apparent that these two are new to science as described below.

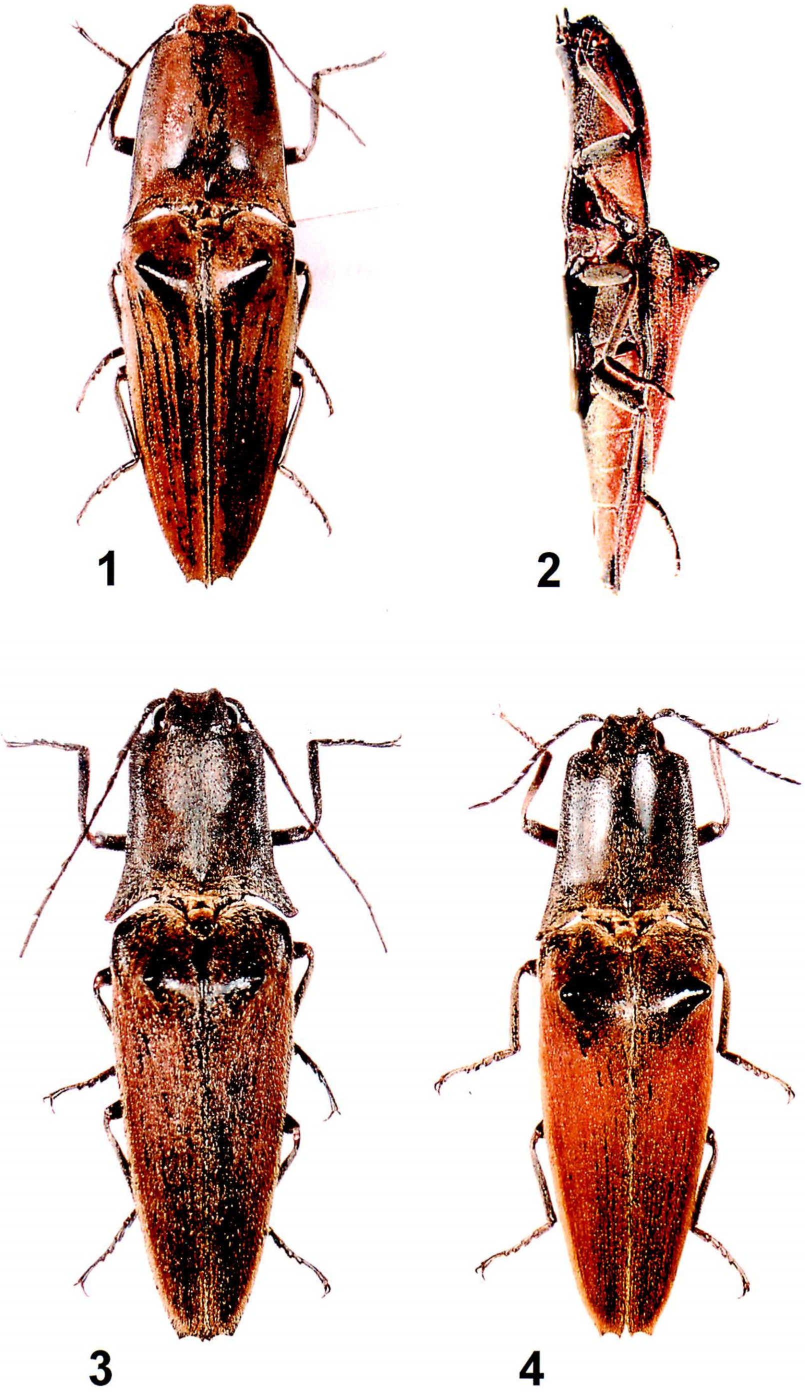
The abbreviations used for this study are as follows: HAC (Hisayuki ARIMOTO's collection, Osaka); KMC (Kiyoshi MASAKI's collection, Kyoto); MSC (Minoru SAWAI's collection, Kôsyû); SRC (Sergio RIESE's collection, Genova); WSC (Wataru SUZUKI's collection, Tokyo).

Before going further, I wish to express my sincere gratitude to Dr. Hitoo ÔHIRA in Okazaki for his constant guidance, and to Dr. Hisashi ASHIDA of the Graduate School of Biostudies, Kyoto University, for his critically reading the manuscript. I am also indebted to Dr. Wataru SUZUKI in Tokyo for his kind help in various ways. Thanks are also due to Messrs. Kiyoshi MASAKI in Kyoto, Minoru SAWAI in Kôsyû and Sergio RIESE in Genova, for their kindly offering to examine the specimens used in this study.

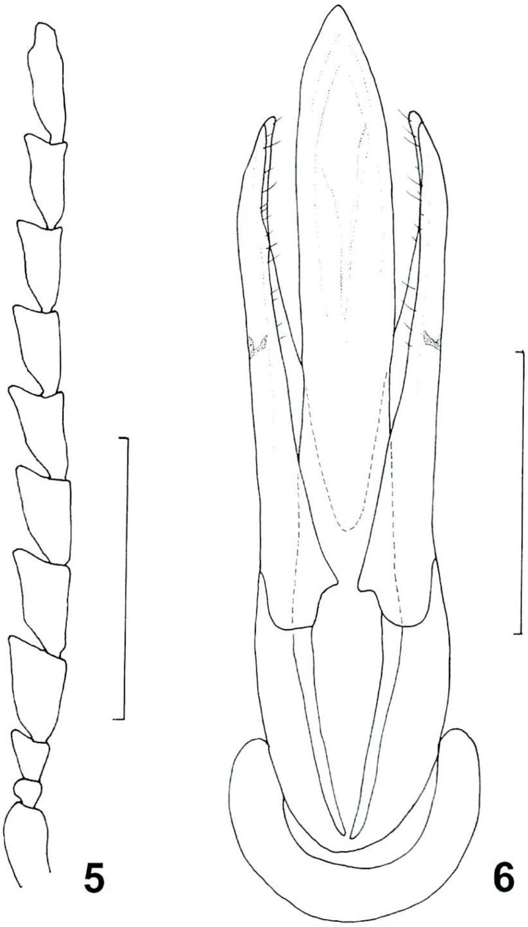
The holotypes of the new taxa to be described in this paper are deposited in the collection of the Osaka Museum of Natural History.

Cryptalaus rakuda sp. nov.
(Figs. 1–2, 5–8)

Male. Length 26.0–32.0 mm and width 7.5–9.0 mm. Body black to blackish brown, shining, robust, subparallel-sided and normally convex above. Dorsal surface clothed with short, recumbent and golden fulvous scale-like setae except for sutural margins and basal three-fourths of lateral margins on elytra which are scattered with whitish setae; ventral surfaces with recumbent whitish setae except for lateral margins of propleura and abdomen with brownish setae.



Figs. 1–4.——1–2, *Cryptalaus rakuda* sp. nov., holotype, dorsal (1) and lateral (2) views; 3–4, *Cryptalaus watarusuzukii* sp. nov., dorsal views, holotype (3) and female paratype (4).

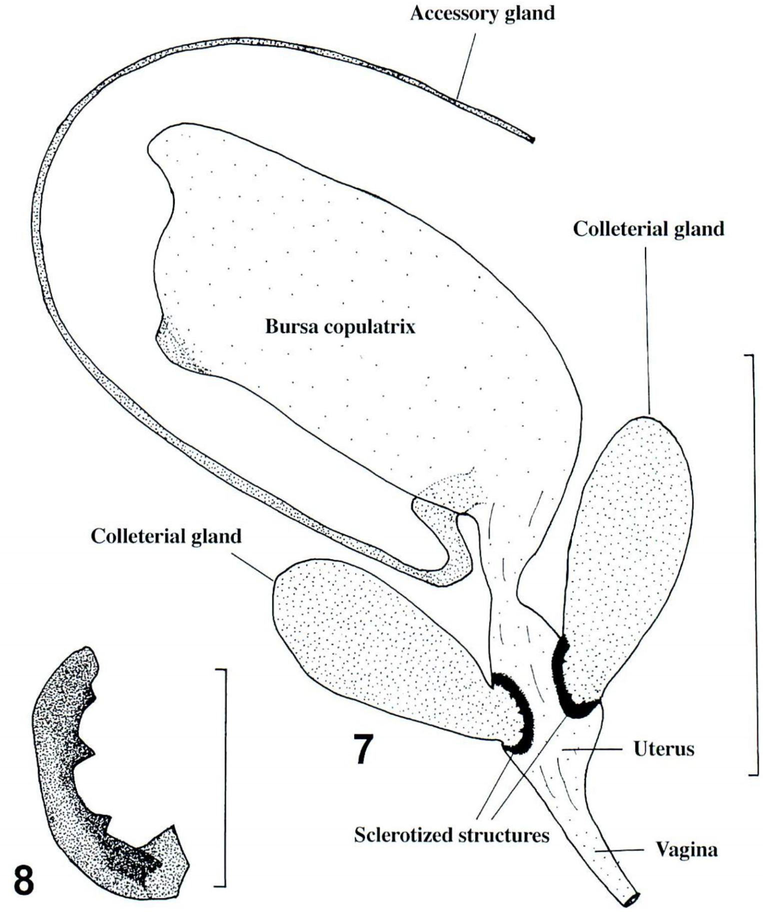


Figs. 5–6. *Cryptalaus rakuda* sp. nov., holotype: right antenna (5); male genitalia, dorsal view (6). Scales: 4 mm for 5; 2 mm for 6.

Head trapezoidal, broadly and triangularly impressed between the eyes; surface sparsely, deeply, unevenly and largely punctate; clypeal margin transverse and impressed at the middle. Antennae (Fig. 5) short; apical segment barely attaining to about basal fourth of pronotum; the second segment small and almost globose; the third triangular and about 1.8 times as long as the second; the fourth triangular about 2.1 times as long as the third; the fourth to tenth clearly serrate.

Pronotum trapezoidal, almost as long as the basal width, sides almost straight, moderately convergent from base to anterior angles which are clearly arcuate; disc moderately convex, more or less broadly depressed along lateral margins; surface sparsely and irregularly punctate, bearing a nodule like median longitudinal elevation just anterior to scutellum; posterior angles short projecting postero- laterad and obtusely pointed at each apex, with a short distinct carina above. Scutellum almost vertical, lingulate with a median longitudinal elevation in basal two-thirds.

Elytra about 2.1 times as long as its basal width; sides almost parallel in basal halves, then



Figs. 7–8. *Cryptalaus rakuda* sp. nov., paratype: outline of female genitalia (7); sclerotized structures of bursa copulatrix (8). Scales: 5 mm for 7; 1 mm for 8.

rounded and gradually convergent towards apices which are clearly emarginate, with each inner and outer angles acutely pointed apicad; striae well defined, coarsely punctuate; intervals rather flattened except for odd-numbered intervals moderately convex and minutely punctulate; with basal portion of each second to fifth interval bears a very conspicuous deltoid-like elevations (Fig. 2).

Legs stout; tarsi and claws simple.

Prosternal process elongate, weakly outcurved just behind procoxal cavities in lateral aspect, rounded and obtusely pointed apex. Mesosternal cavity narrow and horizontal in lateral sides, broadly declinate anteriorly.

Dorsal surface of male genitalia as illustrated (Fig. 6); median lobe robust, distinctly longer than lateral lobes, with sides almost parallel in basal three-fourths, then gradually rounded and convergent towards obtusely pointed apex; lateral lobes narrow and slender, gradually tapering towards obtusely pointed apex and furnished with short setae along the each inside margin.

Female. Length 31.0–39.5 mm and width 9.5–11.5 mm. Similar to male in general structures, but the body a little robuster, antennae slightly shorter, the apical margin of seventh sternite truncate and furnished with black spoon-like setae. Genitalia as illustrated (Fig. 7); bursa copulatrix large, subovate, without sclerotized structures; a accessory gland raised from basal portion of bursa copulatrix; uterus rather small, bearing a pair of c-shaped and sclerotized structures (Fig. 8) and usually a pair of large oblong ovate colleterial glands are raised.

Type series. Holotype: ♂ Mamasa, South Sulawesi, Indonesia, VIII. 2000. Paratypes: 4♂♂, 12♀♀, same date and locality as the holotype (HAC); 1♂, 10♀♀, same locality as the holotype, III. 2001 (SRC); 2♀♀, ditto, V. 2001 (SRC); 4♀♀, ditto, VI. 2001 (SRC); 1♂, 1♀, ditto, II. 2002 (HAC); 2♀♀, ditto, V. 2002 (SRC); 1♀, ditto, IX, 2002 (SRC); 2♂♂, 3♀♀, ditto, X. 2002 (KMC); 1♂, 1♀, ditto, VI. 2005 (HAC); 1♂, 1♀, ditto, VII. 2005 (MSC); 5♀♀, ditto, (WSC); 1♂, Pulu Pulu, South Sulawesi, Indonesia, 30. X. 1985 (WSC); 1♂, 1♀, ditto, IV. 2005 (HAC); 1♀, ditto, IX. 2001 (SRC); 7♂♂, 11♀♀, Makki, South Sulawesi, Indonesia, VII. 1999 (WSC).

Etymology. The specific mane is derived from Japanese "rakuda" that means camel.

Notes. This new species is somewhat similar in general structures to *C. mortuus* (J. TOMSON, 1856) from Borneo, but can be distinguished from the latter by the following points: 1) body narrower and smaller; 2) the sides of pronotum almost straight; 3) the basal portion of elytra with a pair of very conspicuous deltoid-like elevations.

Cryptalaus watarusuzukii sp. nov.

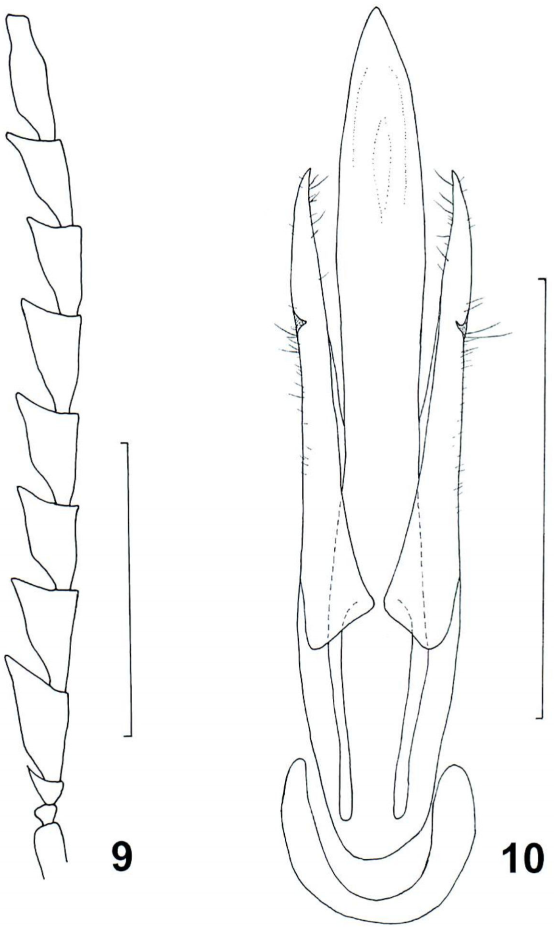
(Figs. 3–4, 9–12)

Male. Length 20.0–24.5 mm and width 5.5–7.0 mm. Body black and shining, elongate, almost parallel-sided and gently convex above. Head and pronotum clothed with short, recumbent and dark reddish brown scale-like setae, though basal margin of pronotum bears a pale yellow scale-like setae and also scattered with semirecumbent black setae among them. Scutellum clothed with short, recumbent and pale yellow scale-like setae. Elytra clothed with short, recumbent and dark reddish brown scale-like setae, though basal and lateral margins with whitish yellow scale-like setae and scattered with semirecumbent whitish setae among reddish brown setae. Ventral surfaces clothed with recumbent and whitish yellow scale-like setae.

Head trapezoidal, and broadly and triangularly impressed between eyes; surface coarsely, unevenly and coarsely punctate; clypeal margin transverse. Antennae (Fig. 9) rater long; extending beyond posterior angles of pronotum at least by apical two segments; the second segment small and almost globose; the third triangular and about 1.2 times as long as the second; the fourth about 4.0 times as long as the third; the third to tenth clearly serrate.

Pronotum trapezoidal, almost as long as the basal width, with sides almost parallel in apical four-fifths, then clearly arcuate towards anterior angles; disc gently convex, with sides more or less depressed along lateral margins; surface very sparsely and irregularly punctate, but the punctures becoming denser laterad; median longitudinal smooth line visible in basal half, and with a small and distinct nodule like elevation just anterior to scutellum; posterior angles rater acutely projecting postero-laterad and weakly truncated apicad, each with a short shallow carina above. Scutellum subvertical, lingulate, with a median longitudinal elevation in basal two-thirds.

Elytra about 2.4 times as long as its basal width; sides almost parallel in basal fourth, then



Figs. 9–10. *Cryptalaus watarusuzukii* sp. nov., holotype: right antenna (9); male genitalia, dorsal view (10). Scales: 4 mm for 9; 2 mm for 10.

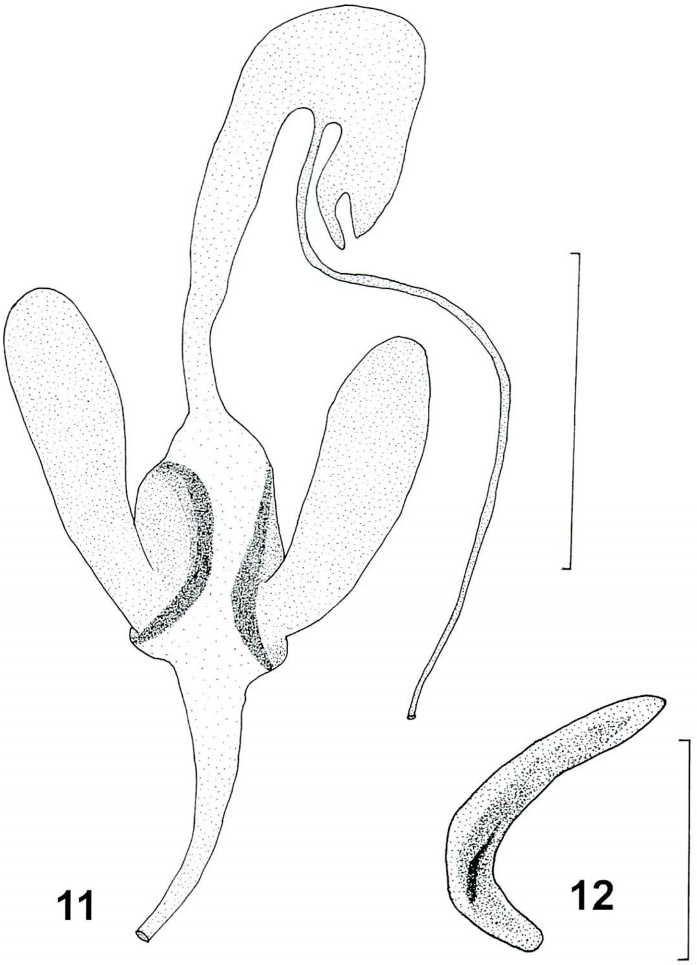
slightly rounded and gradually convergent towards apices, which are clearly emarginate, with each inner and outer angles rater acutely pointed apicad; striae defined, coarsely and unevenly punctate; intervals gently elevated and rather roughed; with basal portion of each second to fifth interval bears a very conspicuous and deltoid-like elevations.

Legs stout; tarsi and claws simple.

Prosternal process elongate, weakly outcurved just behind procoxae in lateral aspect, with obtusely pointed apex. Mesosternal cavity narrow and horizontal in lateral sides, broadly declinate anteriorly.

Dorsal surface of male genitalia as illustrated (Fig. 10); median lobe robust and distinctly longer than lateral lobes, almost parallel in basal three-fourths, then gradually convergent towards obtusely pointed apex; lateral lobes slender, gradually convergent towards pointed apex and furnished with short setae along sides.

Female. Length about 31.5 mm and width about 9.5 mm. Similar to male in general structures, but the body robuster, antennae distinctly shorter, apical margin of seventh sternite trun-



Figs. 11–12. *Cryptalaus watarusuzukii* sp. nov., female paratype: outline of genitalia (11); sclerotized structures of bursa copulatrix (12). Scales: 2 mm for 11; 1 mm for 12.

cate and furnished with black spoon-like setae. Genitalia as illustrated (Fig. 11); bursa copulatrix oblong ovate and without sclerotized structures; a narrow accessory gland raised from under the median portion of bursa copulatrix; uterus subovate, usually bearing a pair of c-shaped and sclerotized structures (Fig. 12) and a pair of large oblong ovate colleterial glands are raised.

Type series. Holotype: ♂, Pulu Pulu, South Sulawesi, Indonesia, 16. XI. 1985. Paratypes: 1♂, same place as the holotype, 15. XI. 1985 (WSC); 1♂, ditto, 17. X. 1895 (WSC); 1♀, ditto, 15. XI. 1898 (WSC).

Etymology. This specific name is dedicated to Dr. Wataru SUZUKI, who gave me an opportunity of examining these specimens for this study.

Notes. This new species is similar to the preceding species, but can be easily distinguished from the latter by the following points: 1) body smaller and distinctly slenderer; 2) antennae distinctly longer especially in male; 3) posterior angles of pronotum acutely projected posteriad and weakly truncated apicad; 4) the male genital apparatus different in structures.

要　　約

有本 久之：東南アジア産コメツキムシ科甲虫（第2報）：インドネシアのスラウェシ島から発見された *Cryptalaus*属コメツキムシの2新種．——— *Cryptalaus*属は主に東洋区とオーストラリア区から多くの種類が知られている．今回インドネシアのスラウェシ島から発見された*Cryptalaus*属の2種を新種と認め，*C. rakuda* および *C. watarusuzukii* と命名して記載した．これらは上翅基部に1対の円錐状の大きな突起を持った形態をしており，雌の内部生殖器も少し変わった形態をしている．これらの形態的な特徴から本属内においてはやや特異なグループを形成する種群であると考えられる．

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Three New Species of *Stenus cirrus*-Group (Coleoptera, Staphylinidae) from Guangdong, South China

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Abstract Three new species of the *Stenus cirrus*-group collected from Guangdong, South China are described under the name of *S.* (*Hypostenus*) *huanghaoi*, *S.* (*Hypostenus*) *xuwangi* and *S.* (*Hypostenus*) *nanlingmontium*, and their diagnostic characters are illustrated.

Key words Coleoptera, Staphylinidae, *Stenus cirrus*-group, new species, China.

The *Stenus cirrus*-group is a large group of the genus *Stenus* LATREILLE, 1797, of which species can be easily recognized by long suberect to erect setae on abdomen and other characters. (PUTHZ, 2000; NAOMI, 1997) Up to the present, 32 species of this group has been described from the world, of which 15 were from China, 13 from Japan, 3 from Vietnam and 1 from North India. During our studies on the *Stenus* of China, three new species belonged to this group have been found in our recent collections from Guangdong province, and we would like to describe them in this paper.

The holotype and paratypes in this study are deposited in Department of Biology, Shanghai Normal University, P. R. China, and the paratypes are also deposited in the private collections of V. PUTHZ (Schlitz, Germany).

The proportional measurements are abbreviated as follows: HW = greatest width of head including eyes; PW = greatest width of pronotum; EW = greatest width of elytra; PL = length of pronotum; EL = greatest length of elytra; SL = length of sulture.

Stenus (*Hypostenus*) *huanghaoi* TANG and LI sp. nov.

(Figs.1, 4–7)

Apterous, moderately shiny, head black, pronotum black with the area along posterior margin dark brown, elytra brown, abdomen dark brown with last three segments a litter darker; pubescence long, especially conspicuous and erect on abdomen. Antennae reddish yellow, club

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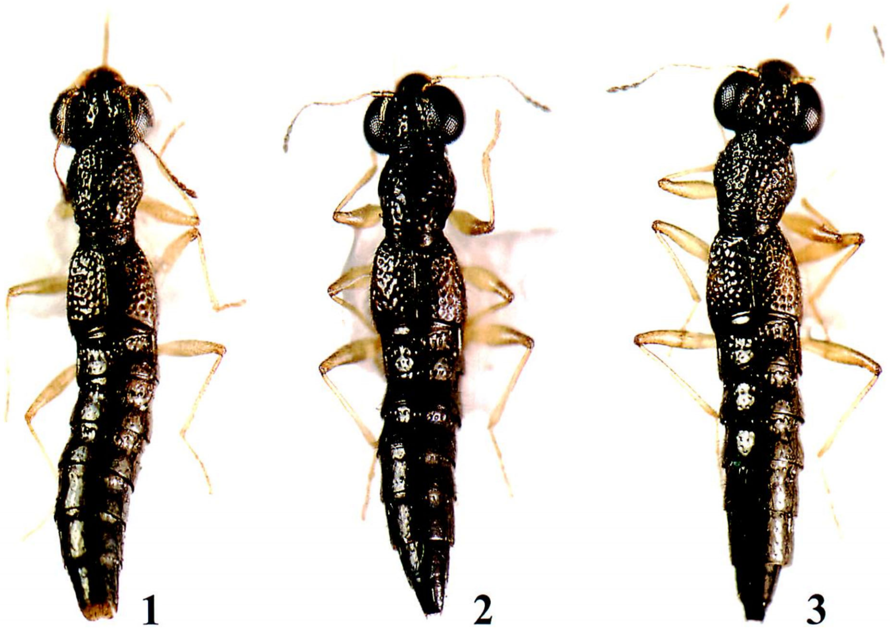


Figs. 1–3. Adult habitus —— 1, *Stenus* (*Hypostenus*) *huanghaoi* sp. nov., male; 2, *Stenus* (*Hypostenus*) *xuwangi* sp. nov., male; 3, *Stenus* (*Hypostenus*) *nanlingmontium* sp. nov., male.

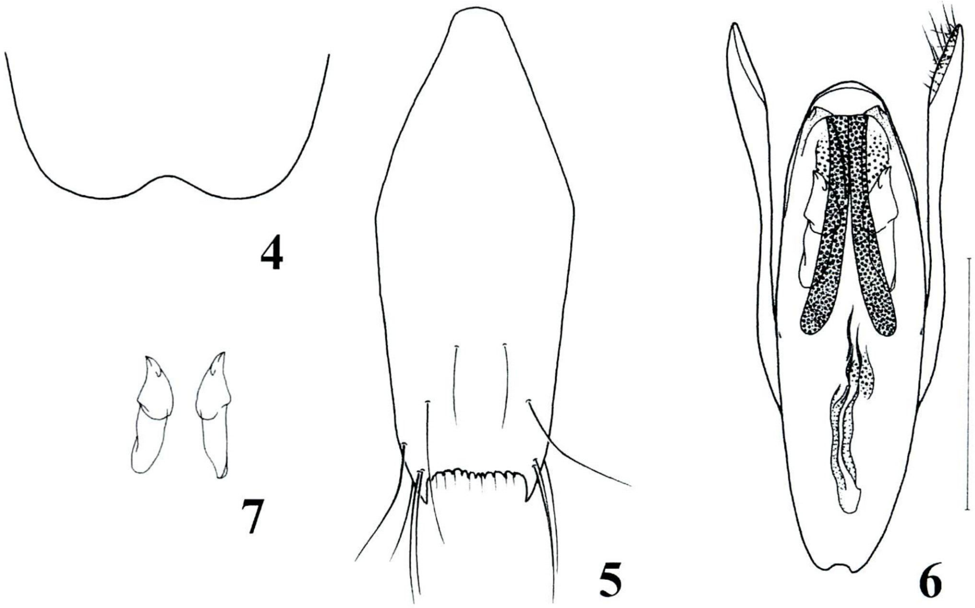
infuscate. Maxillary palpi and legs reddish yellow. Clypeus black, labrum light reddish brown with anterior margin reddish yellow, moderately sparsely pubescent. Paraglossae oval. Length: 3.9 mm (forebody: 1.8 mm).

Proportional measurements of holotype: HW : 46.5, PL : 36.0, PW : 34.5, EL : 41.0, EW : 40.0, SL : 30.5.

Head 1.16 times as wide as elytra; clypeofrontal area sparsely punctate and pubescent; basiantennal tubercles globoid; interocular area with deep longitudinal furrows, median portion slightly convex, distinctly extending beneath the level of inner eye margins; disk moderately coarsely and densely punctured, the punctures round, larger and sparser on median area than those near inner margins of eyes, diameter of a large puncture about as wide as medial cross section of 2nd antennal segment, interstices between punctures smooth, smaller than half diameter of punctures. Antennae when reflexed slightly extending beyond the posterior margin of pronotum; 3rd to 8th segments much narrower than 2nd; 9th to 11th gradually broadened, forming a loose club; the relative length of segments from base to apex as 7.5: 5.5: 12.5: 7.0: 6.5: 5.0: 5.5: 3.5: 4.0: 5.0: 6.5.

Pronotum 1.04 times as long as wide, 0.86 times as wide as elytra, widest at about the middle and constricted at base; disk relatively even without distinct median longitudinal furrow but with a faint trail along the middle, coarsely and very densely, slightly confluently punctured, the punctures round, different in size, diameter of the large punctures about as wide as medial cross section of 2nd antennal segment, and interstices smooth, much smaller than half diameter of punctures.

Elytra a little longer than wide, distinctly constricted at base, lateral margins gently divergent posteriad; posterior conjoint margins roundly and distinctly emarginate at the middle; disk



Figs. 4–7. *Stenus* (*Hypostenus*) *huanghaoi* sp. nov.—— 4, male 8th sternite; 5, male 9th sternite; 6, aedeagus in ventral view; 7, expulsion clasp of aedeagus. Scale = 0.25 mm.

uneven with a distinct transverse impression at about middle; upper surface coarsely and very densely, slightly confluently punctured as on pronotum, the punctures round to elliptic, larger than those on the pronotum, and interstices smooth, much smaller than half diameter of punctures.

Abdomen cylindrical, moderately coarsely and densely (anteriorly) to finely and very sparsely (posteriorly) punctate; paratergites very narrow and smooth, present only in 3rd segment; tergite 7 without a membranous fringe apically; the punctures round to elliptic, gradually but distinctly becoming smaller and sparser posteriad, each puncture with a long and suberect seta, and interstices smooth, varied from smaller to larger than diameter of punctures.

Legs elongate, hind tarsi 0.72 times as long as hind tibiae, 4th tarsomeres strongly bilobed.

Male. Eighth sternite (Fig. 4) with a shallow emargination at the middle of posterior margin; 9th sternite (Fig. 5) with long apicolateral projections, posterior margin serrately emarginated and slightly projected at middle.

Aedeagus (Fig. 6) with median lobe broadest at about the middle and gradually tapering apicad, apical sclerotized area very broad and rounded at apex, expulsion clasp (Fig. 7) large, strongly sclerotized, internal sac as in the figure 6; parameres slender and almost straight, distinctly extending beyond the median lobe, which are swollen at apex, each with about 18 setae on apico-internal margins.

Female. Unknown.

Type specimens. Holotype: male, Nanling, Ruyuan County, Guangdong Prov., alt. 1019 m, 18. VI. 2007, HUANG Hao and XU Wang leg.

Distribution. China (Guangdong Prov.).

Remarks. This species is similar to *S.* (*Hypostenus*) *deliculus* RYVKIN, 1992 from

Vietnam, but can be distinguish from latter by less coarse punctation on head and sexual characters. It is also a little similar to *S.* (*Hypostenus*) *andoi* TANG and LI, 2005 from Hunan province, China, but can be easily distinguished from elytra brown without orange spot.

Etymology. This species is named in honor of Mr. HUANG Hao, who collected this new species.

Stenus* (*Hypostenus*) *xuwangi TANG and LI sp. nov.

(Figs.2, 8–12)

Apterous, moderately shiny, head black, pronotum and abdomen dark brown, elytra light brown, darkend near base and suture, distinctly lighter in lateral side, without delimited spots; pubescence long, especially conspicuous and erect on abdomen. Antennae reddish yellow, club infuscate. Maxillary palpi and legs reddish yellow. Clypeus black, labrum reddish brown with anterior margin reddish yellow, moderately sparsely pubescent. Length: 3.4–4.0 mm (forebody: 1.8–2.0 mm).

Proportional measurements of holotype: HW : 47.0, PL : 39.0, PW : 35.0, EL : 41.5, EW : 42.5, SL : 31.0.

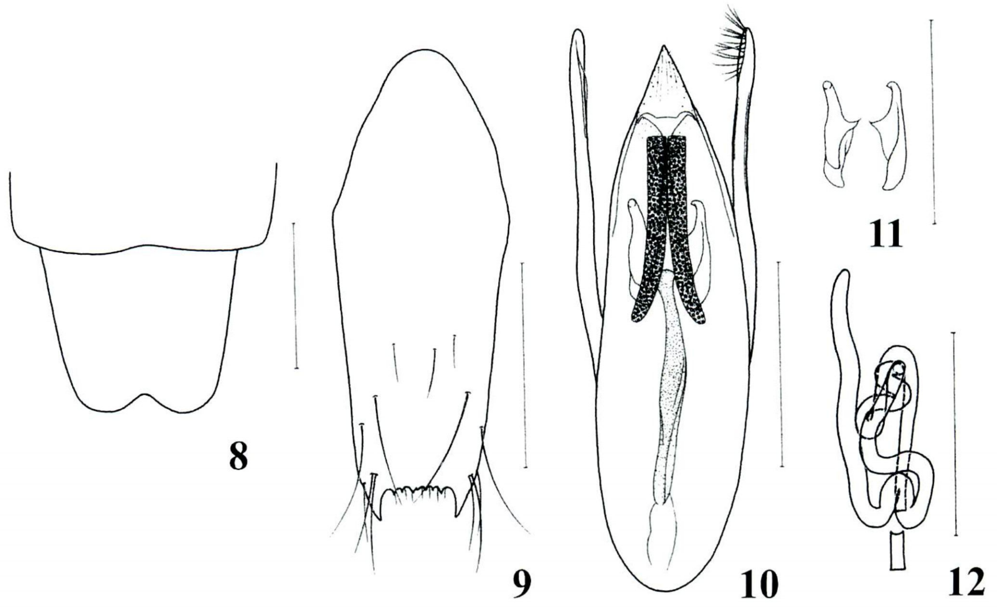
Head 1.11 times as wide as elytra; clypeofrontal area sparsely punctate and pubescent; basiantennal tubercles globoid; interocular area with deep longitudinal furrows, median portion slightly convex, distinctly extending beneath the level of inner eye margins; upper surface moderately coarsely and densely punctate,the punctures round, larger and sparser on median area than those near inner margins of eyes, diameter of the large puncture among those about as wide as medial cross section of 2nd antennal segment, and interstices between punctures smooth, a little smaller than half diameter of punctures. Antennae when reflexed slightly extending beyond the posterior margin of pronotum; 3rd to 8th segments much narrower than 2nd; 9th to 11th gradually broadened, forming a loose club; the relative length of segments from base to apex as 7.0: 5.0: 12.0: 7.0: 7.0: 5.0: 5.5: 3.5: 4.0: 4.5: 6.0. Paraglossae oval.

Pronotum 1.11 times as long as wide, 0.82 times as wide as elytra, widest a little before the middle and constricted at base; disk even without median longitudinal furrow; disk coarsely and very densely, slightly confluently punctured and almost same-sized, the punctures round and as large as the largest punctures on head, and interstices smooth, much smaller than a half diameter of punctures.

Elytra slightly shorter than wide, distinctly constricted at base, lateral margins gently divergent posteriad; posterior conjoint margins roundly and distinctly emarginate at the middle; disk even with an indistinct humeral impression and an indistinct sutural impression; surface coarsely and very densely, slightly confluently punctured, the punctures round to elliptic, larger than those on the pronotum, and interstices smooth, much smaller than half diameter of punctures.

Abdomen cylindrical, moderately coarsely and densely (anteriorly) to finely and very sparsely (posteriorly) punctate; paratergites very narrow and smooth, present only in 3rd segment; tergite 7 with a narrow membranous fringe apically; the punctures round to elliptic, gradually but distinctly becoming smaller and sparser posteriad, each puncture with a long and suberect seta, and interstices smooth, varied from smaller to larger than diameter of punctures.

Legs elongate, hind tarsi 0.80 times as long as hind tibiae, 4th tarsomeres strongly bilobed.



Figs. 8–12. *Stenus* (*Hypostenus*) *xuwangi* sp. nov.—— 8, male 7th-8th sternites; 9, male 9th sternite; 10, aedeagus in ventral view; 11, expulsion clasp of aedeagus; 12, spermatheca. Scale = 0.25 mm.

Male. Seventh sternite (Fig. 8) with a faint emargination at the middle of posterior margin; 8th sternite (Fig. 8) with a shallow emargination at the middle of posterior margin; 9th sternite (Fig. 9) with long apicolateral projections, posterior margin almost straight and serrately emarginated.

Aedeagus (Fig. 10) with median lobe subparallel at base and tapering apicad at about basal 1/2, apical sclerotized area with a apical cuspidate projection, expulsion clasp (Fig. 11) large, strongly sclerotized, internal sac as in the figure10; parameres slender and almost straight, extending a little beyond the median lobe, which are slightly folded at apex, each with about 16 setae on apico-internal margins.

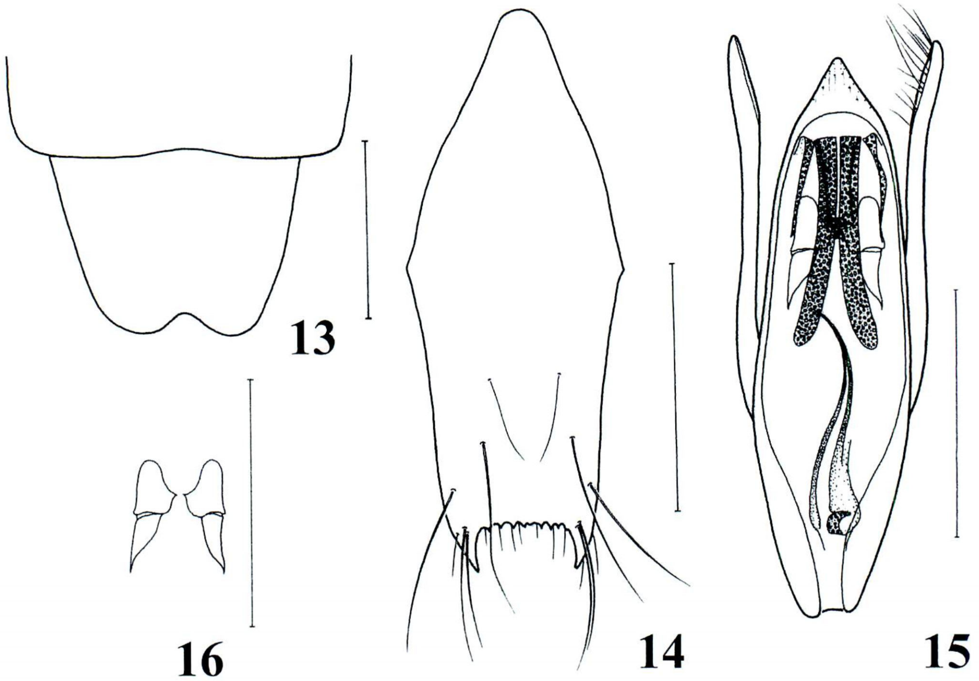
Female. Abdomen broader than that in male; 8th sternite entire; strongly sclerotiized spermatheca as in Fig. 12.

Type specimens. Holotype: male, Nanling, Ruyuan County, Guangdong Prov., alt. 1019 m, 18. VI. 2007, HUANG Hao and XU Wang leg. Paratypes: 2 males and 6 females, same data as the holotype.

Distribution. China (Guangdong Prov.).

Remarks. This species is similar to *S. huanghaoi* sp. nov., which is also from the same locality, but is different in the following points: 1. pronotum with punctures well delimited and less confluent; 2. elytra relatively broader with length slightly shorter than width; 3. sexual characters. It is also very similar to *S.* (*Hypostenus*) *cootrianus* PUTHZ, 2002 from Fujian province, China, but different in smaller and shallower abdominal punctation and sexual characters.

Etymology. This species is named in honor of Mr. XU Wang, who collected this new species.



Figs. 13–16. *Stenus* (*Hypostenus*) *nanlingmontium* sp. nov.—— 13, male 7th-8th sternites; 14, male 9th sternite; 15, aedeagus in ventral view; 16, expulsion clasp of aedeagus. Scale = 0.25 mm.

Stenus* (*Hypostenus*) *nanlingmontis Tang and Li sp. nov.

(Figs.3, 13–16)

Apterous, blackish, moderately shiny, elytra brownish, each with a large suboval orange spot; pubescence long, especially conspicuous and erect on abdomen. Antennae reddish yellow, club infuscate. Maxillary palpi and legs reddish yellow. Clypeus black, labrum brown with anterior margin reddish yellow, moderately sparsely pubescent. Length: 4.2–4.9 mm (forebody: 2.0–2.2 mm).

Proportional measurements of holotype: HW : 50.5, PL : 41.0, PW : 38.0, EL : 44.5, EW : 43.5, SL : 32.0.

Head 1.16 times as wide as elytra; clypeofrontal area sparsely punctate and pubescent; basiantennal tubercles small; interocular area with deep longitudinal furrows, median portion slightly convex, distinctly extending beneath the level of inner eye margins; disk moderately coarsely and densely punctate,the punctures round, larger and sparser on median area than those near inner margins of eyes, the diameter of a large puncture among those about as wide as the widest cross section of 2nd antennal segment, and interstices between punctures smooth, a little smaller than half diameter of punctures. Antennae when reflexed slightly extending beyond the posterior margin of pronotum; 3rd to 8th segments much narrower than 2nd; 9th to 11th gradually broadened, forming a loose club; the relative length of segments from base to apex as 7.5: 5.5: 14.5: 7.5: 7.5: 6.0: 6.0: 4.0: 4.5: 4.5: 6.5. Paraglossae oval.

Pronotum 1.08 times as long as wide, 0.87 times as wide as elytra, widest a little before the middle and constricted at base; disk relatively uneven, with a very shallow and narrow median longitudinal furrow, two faint impressions in anterior half, two faint impressions in posterior half, coarsely, very densely and slightly confluently punctured, the punctures round, different in size, diameter of a large puncture about as wide as the widest cross section of 2nd antennal segment, and interstices smooth, much smaller than half diameter of punctures.

Elytra slightly longer than wide, distinctly constricted at base, lateral margins gently divergent posteriad; posterior conjoint margins roundly and distinctly emarginate at the middle; disk uneven, with a distinct longitudinal humeral impression, a distinct sutural impression and an indistinct small postero-lateral impression on each side, coarsely, very densely and slightly confluently punctate, the punctures round to elliptic, similar to those on pronotum in size, and interstices smooth, much smaller than half diameter of punctures. Lateral elytral spot long, about half as long as and 2/5 as broad as elytron.

Abdomen cylindrical, moderately coarsely and densely (anteriorly) to finely and very sparsely (posteriorly) punctate; paratergites very narrow and smooth, present only in 3rd segment; tergite 7 with a narrow membranous fringe apically; punctures round to elliptic, gradually but distinctly becoming smaller and sparser posteriad, each puncture with a long and suberect seta, and interstices smooth, varied from smaller to larger than diameter of punctures.

Legs elongate, hind tarsi 0.76 times as long as hind tibiae, 4th tarsomeres strongly bilobed.

Male. Seventh sternite (Fig. 13) with a faint emargination at the middle of posterior margin; 8th sternite (Fig. 13) with a shallow emargination at the middle of posterior margin; 9th sternite (Fig. 14) with long apicolateral projections, posterior margin almost straight and serrately emarginated.

Aedeagus (Fig. 15) with median lobe subparallel at base and abruptly tapering apicad at about basal 5/6, apical sclerotized area with a small but relatively round apex, expulsion clasp (Fig. 16) large, strongly sclerotized, internal sac as in the figure 15; parameres slender and almost straight, extending a little beyond the median lobe, each with about 14 setae on apico-internal margins.

Female. Abdomen broader than that in male; 8th sternite with posterior margin roundly pointed at middle; strongly sclerotiized spermatheca as in Fig. 11. (The illustration of spermatheca isn't given here, as it is hard to be observed in immature females.)

Type specimens. Holotype: male, Nanling, Ruyuan County, Guangdong Prov., alt. 1019 m, 18. VI. 2007, HUANG Hao and XU Wang leg. Paratypes: 1males and 3 females, same data as for the holotype.

Distribution. China (Guangdong Prov.).

Remarks. This new species is similar to *S.* (*Hypostenus*) *cootrianus* PUTHZ, 2002 from Fujian province, China, but may be distinguished from the latter one by denser punctation on the pronotum and elytra, larger body size, and the sexual characters.

Etymology. The specific name is derived from "Nanling", the type locality of this species.

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We wish to express our hearty thanks to Dr. V. PUTHZ for his constant guidance on our study of Chinese *Stenus* and many helps in other ways, to Ms ZHAO Mei-Jun and Mr. HU Jia-

Yao for their continuous helps in many ways, to Dr. S.-I. NAOMI for his kindness in offering his papers. Our special thanks are due to Mr. HUANG Hao and Mr. Xu Wang, who collected all the specimens studied in this paper.

要約

湯　亮，趙　雲龍，李　利珍：中国・広東省乳源県南嶺自然保護区で発見されたメダカハネカクシ属 *cirrus* グループの3新種——広東省の南嶺自然保護区において *Stenus cirrus*-group 属する3新種が発見され，それぞれ *Stenus huanghaoi*, *S. xuwagi*, *S. nanlingmontis* と命名記載した．これら3種は全て *Hypostenus* 亜属に所属する．

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A New Species of *Ocypus* (*Pseudocypus*) from the Shiretoko Peninsula, Hokkaido, Japan (Coleoptera: Staphylinidae: Staphylinina)

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Abstract A new *Ocypus* (*Pseudocypus*) is described from Shiretoko Peninsula, Hokkaido, Japan under the name of *O.* (*P.*) *shiretokensis*.

Ocypus LEACH is moderately large genus, consisting of three subgenera (SMETANA, 2004) and about 150 species are distributing in Holarctic and Oriental regions (HERMAN, 2001). Four species of *Ocypus* were known from Japan by SMETANA (2004). In *Ocypus*, the mandibular dentition of each subgenus is distinctly different in the basic structure respectively. However, HAYASHI (1993) treated *Ocypus weisei* HAROLD as a species of another genus *Agelosus* SHARP. *Ocypus japonicus* SAWADA also belongs to another genus *Miobdelus* SHARP because of having same typical structures of mouth organs, limbic conformation of pronotum and others. *O. lewisius* is not true *Pseudocypus* species because of having basically different mandibular dentition. Therefore, the author considers that true Japanese *Pseudocypus* is only one species, *Ocypus nigroaeneus* SHARP.

In this paper, I am going to describe a new species of *Ocypus* (*Pseudocypus*) under the name of *O.* (*P.*) *shiretokensis* from Hokkaido, Japan. The present new species is very similar in general appearance to *O.* (*P.*) *nigroaeneus* and closely related to *O.* (*P.*) *helleni* J. MÜLLER from Central Asia with it in having similar structure of dentition of mandibles.

The holotype are preserved in the collection of Osaka Museum of Natural History.

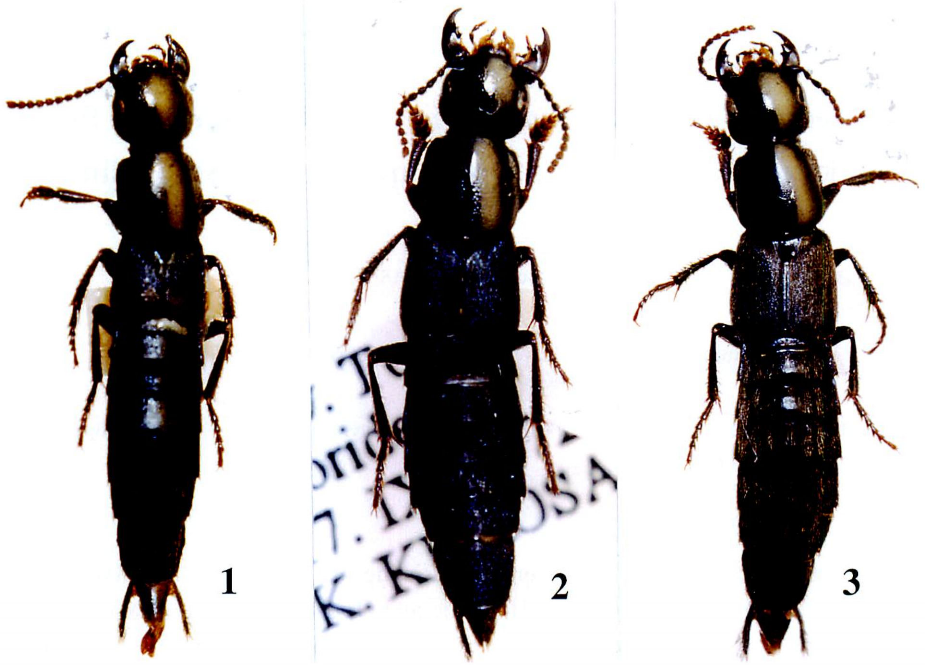
Before going into further details, I wish to express my hearty thanks to Dr. Jûro KAMEI, Honjo C., Akita ref. and Mr. Hideyo NOMURA, Sakai C., Osaka for their kind offers of interesting materials. I am heartily grateful to Dr. Katsura MORIMOTO, Emeritus Professor of the Kyûshû University, Fukuoka, for his kindness in critically reading the manuscript of this paper.

The main terminology and the abbreviations used herein are the same as those explained in HAYASHI, 1993.

Ocypus shiretokensis sp. nov.

(Figs. 1, 4–13)

Male. Body very elongate, parallel-sided, thick and stout, moderately shiny in fore body, lusterless in hind body and wholly covered with brownish lustrous pubescence; coloure black,



Figs. 1–3. Habitus of *Ocypus* spp. 1, *O. shiretokensis* sp. nov. (Holotype); 2, *O. nigroaeneus* SHARP (♀); 3, *O. helleni* SCOPOLLI (Tadzikistan) (♂)

mandibles pitchy, other mouth organs light brown, antennae with basal 3 segments pitchy, base of 2nd segment reddish brown and 4th to 11th segments brownish; legs dark brown. Length: 11.8–13.2 mm; width: 2.4–2.6 mm.

Head (Fig. 4) subpentagonal, about 1.2 times as wide as long, a little narrower (34.5 : 37.0) and much shorter than pronotum (29.5 : 39.5); sides nearly parallel and straight; anterior margin feebly arcuate and posterior one nearly straight; disk gently and uniformly convex, sparsely scattered with small umbilicate punctures mingled with very fine punctures except that front clypeal area and narrow median area behind vertex are impunctate and glabrous, and no microsculpture; chaetotaxy of macrosetae shown as Fig. 4, and all of them fully developed. Neck punctured as on head. Eyes moderately large, the longitudinal diameter nearly as long as postgenae. Mandibles (Figs. 5–6) thick and stout; left mandible (Fig. 5) bearing widely separated two large teeth at the middle of inner margin and a small one just on distal side of the former teeth, and right one (Fig. 6) also bearing widely separated two teeth at about the middle of inner margin. Antennae moderately long, barely reaching the middle of pronotum, not clavate but gradually thickened apically from 3rd; basal 3 segments polished, much longer than wide, 4th to 6th a little longer than wide, 7th to 10th slightly wider than long, and 11th a little longer than wide; antennae with the following relative length (width) from base to apex: 23.0 (10.0) : 13.0 (7.0) : 13.5 (7.0) : 10.0 (8.0) : 10.0 (8.0) : 9.0 (8.0) : 8.5 (9.0) : 8.5 (9.0) : 8.5 (9.0) : 8.0 (9.0) : 13.0 (9.0).

Pronotum (Fig. 4) subquadrate, parallel-sided, largely rounded off posteriorly, slightly longer than wide (39.5 : 37.0), slightly narrower (37.0 : 39.0) and longer than elytra (39.5 : 36.0), rather strongly and uniformly convex; anterior margin weakly arcuate, anterior angles widely rounded; disk sparsely punctured as on head except that narrow clypeo-frontal area and

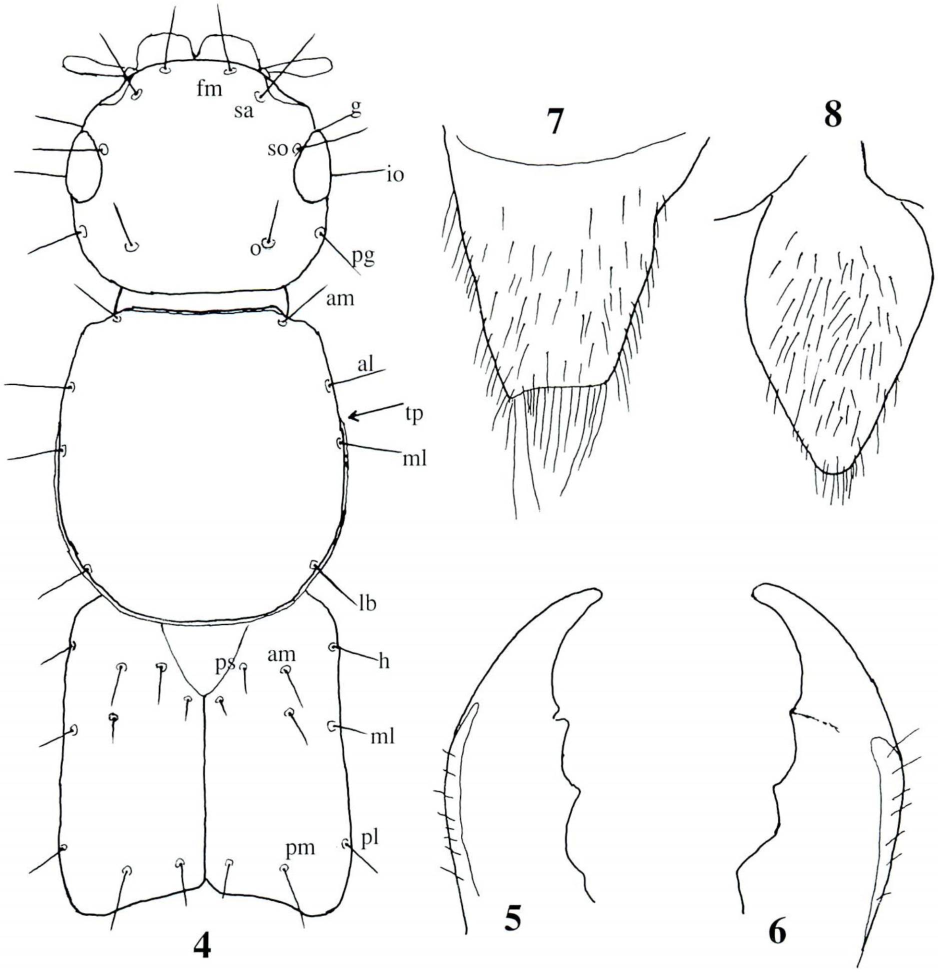
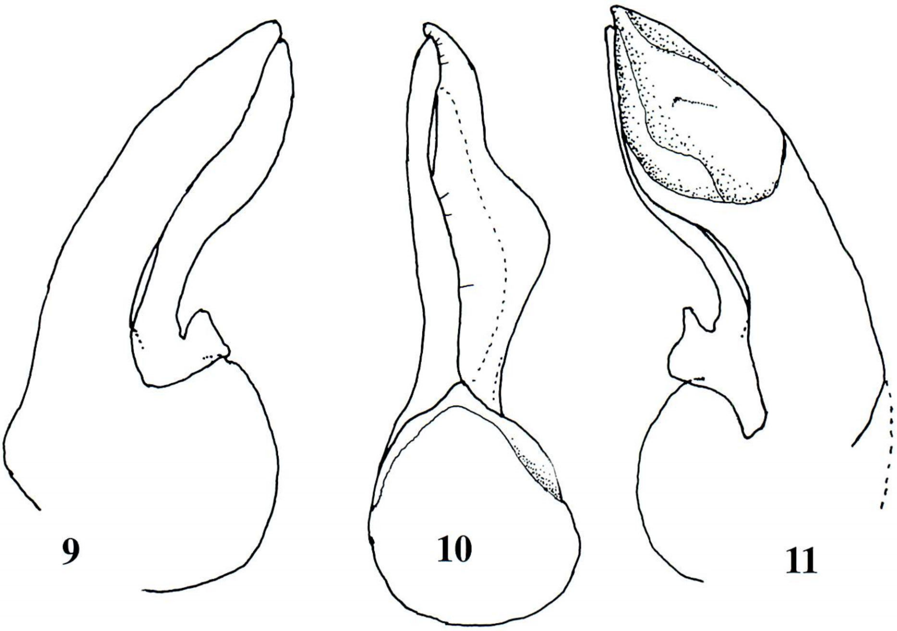


Fig. 4–11. *O. shiretokensis* sp. nov. 4, Fore body, with chaetotaxy of macrosetae (Head: fm=front-marginal; g=genal; io=infra-orbital; o=occipital; pg=postgenal; sa=supra antennal; so=supra-orbital) (Pronotum: al= anterolateral; am=antero-marginal; lb=latero-basal; ml=mid-lateral; tp=turning point of superior laeral line) (Elytra: al=antero-lateral; am=antero-median; h=humeral; ml=mid-lteral; pl=postero-lateral; pm=postero-median; ps=parascutellar;); 5, left mandible; 6, right mandible; 7, 10th tergite; 8, 9th sternite.

median line from vertex to neck are impunctate and glabrous, the punctures a little smaller than those on head, interstices with very sparse and minute punctures, without microsculpture; macrosetae composing chaetotaxy as Fig. 4, fully developed; superior lateral line gently incurved forwards from just behind antero-lateral macroseta and thence hidden under anterior corner.

Elytra (Fig. 4) short, subquadrate, slightly wider than long (39.0 : 36.0), nearly parallel-sided, widely rounded at postero-lateral angles, narrowly so at postero-internal angles and rather deeply emarginate at apical margin; sides weakly arcuate; surface flattened, weakly convex sutural area in full length, moderately densely and strongly asperate-punctate, with recumbent pubescence, and interstices with clear reticulate microsculpture; chaetotaxy of macrosetae as Fig. 4, antero-median macroseta (am) and 2 sublateral seta (sls) present. Wings atrophied, slight-



Figs. 9–11, *O. shiretokensis* sp. nov.: 9, male genitalia, left lateral view; 10, ditto, ventral view; 11, ditto, right lateral view.

ly shorter than elytra.

Abdomen nearly parallel-sided, gently narrowed from 7th segment to anal end; tergites minutely and rather sparsely asperate-punctate, with distinct reticulate microsculpture, the punctures partly closely arranged in transverse arches on basal 3 visible tergites, thence those are becoming more sparser towards anal tergite, and in addition to those, each tergite closely punctured along hind margin; 7th tergite without palisade apical fringe; 10th tergite (Fig. 7) truncate at apical margin; sternites with punctures larger and much sparser than those on tergites; 8th sternite narrowly and weakly emarginate at the middle of apical margin; 9th sternite (Fig. 8) obtusely rounded at apex.

Legs moderately long and thick; protibiae densely pubescent on under side; protarsi strongly dilated in basal 4 segments as a leaf, with modified setae on under side.

Male genitalia (Figs. 9–11) markedly asymmetrical, twisted to the left; median lobe, in ventral view, weakly sinuate, markedly dilated to the light, obliquely and sinuously truncate at apical margin, subacute at apex, subcylindrical and subacute at the apex in left lateral view, and, in right lateral view, gibbiform in apical third, apical orifice largely opened latero-posteriorly in right side.

Female. Unknown.

Holotype: ♂, Shiretoko pass (Alt. 730 m), Hokkaido, 29. VII. 1989, H. NOMURA leg. Paratype: 1 ♂, Shiretoko, Hokkaido, 30. VII. 1992, H. NOMURA leg.; 1 ♂, Mt. Raus, Hokkaido, 12. VII. 1966, J. KAMEI leg.

Bionomics. Unknown.

Remark.s The present species is very similar in general appearance to *O. nigroaeneus* but apparently distinguishable from the latter in smaller and more elongate body. In the new species the area before vertex is sparsely but evenly punctured, and the pronotum is evenly punctured except for median line, while in the latter species the area before the vertex is widely almost impunctate and the pronotum bears a pair of impunctate spaces both side of the middle. Parameres of the male genitalia of the new species is slender, not dilated distally, while in *O. nigroaeneus* the parameres distinctly dilated in distal half.

Etymology The specific name is derived from the type locality.

要　　約

林　靖彦：知床半島産クロハネカクシの一新種．———日本産 *Ocypus* 属は 4 種知られているが，そのうち *Ocypus weisei* HAROLD は筆者が既に述べたように，本属の種ではなく，*Agelosus* 属に所属するものと考えている．*Ocypus japonicus* SAWADA はその口器や前胸の構造等から *Miobdelus*属 に所属させるべきと考えられた．また，*Ocypus lewisius* SHARP は口器の構造上，現在所属している *Pseudocypus* 亜属とは基本的な歯列が異なっており，真の本亜属の種とは考えにくい．*Ocypus nigroaeneus* SHARP クロハネカクシのみが真の *Pseudocypus* の種である．今回記載した新種，*O.* (*Pseudocypus*) *shiretokensis* シレトコクロハネカクシ（新称）は前種に極めてよく似た種であるが，やや小型で，体がより細く，頭部，前胸背の点刻，雄交尾器の構造が異なるなどで容易に区別出来る．本種は知床半島のみから得られており，道内他地域で得られた個体は全てクロハネカクシであった．

Errata and Corrigenda

In the description of *Carcinocephalus satoi* HAYASHI, I failed to describe the the depository of the holotype. Therefore I correct the error in the following:——

Elytra, *Tokyo*, **35** (1): 52

Line10 for HAYASHI leg. Allotype: ♀, same locality as .... read HAYASHI leg. (deposited in the collection of Osaka Museum of Natural History). Allotype: ♀, same locality as ....

I am very grateful to Dr. Alfred F. NEWTON, Field Museum, Chicago for his kindly pointiong out my error, and to Dr. Shun-Ichi UÉNO, Emeritus Curator of the National Science Museum (Nat, Hist.), Tokyo for his proper advice.

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A Study of Genera *Morphostenophanes* PIC and *Promorphostenophanes* KASZAB (Coleoptera: Tenebrionidae)

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Abstract Tenebrionid genera *Morphostenophanes* PIC and *Promorphostenophanes* KASZAB are reviewed. The latter is newly downgraded to a junior synonym of the former. *Morphostenophanes elegantulus* sp. nov. is described. New combinations and statuses proposed are: *Morphostenophanes vietnamicus* (KASZAB, 1980) and *M. birmanicus* (KASZAB, 1980). *Promorphostenophanes koyamai* MASUMOTO, 1990 is newly synonymized with the latter. A key to all the members of *Morphostenophanes* is also given.

PIC (1925) erected the genus *Morphostenophanes* for *M. aenescens* from Yunnan. KASZAB (1941) described *M. papillatus* from "Szetschuan." Meanwhile, he (1960) erected the genus *Promorphostenophanes* for *P. avatus* from Yunnan, which is closely related to the genus *Morphostenophanes*. Later, he (1980) described two subspecies of *P. atavus*, subsp. *vietnamicus* from North Vietnam, and subsp. *birmanicus* from "Shan States, Burma." MASUMOTO (1990) described *P. koyamai* from northern Thailand.

Since the finding of a new species annectent between those two genera, review of these genera and species included has been carried out, and the results obtained are shown in the following lines.

Before going further, the authors wish to express their gratitude to Dr. Ottó MERKL, the Hungarian Natural History Museum, Budapest, and Mr. Max BARCLAY, the Natural History Museum, London, for loaning the types. Deep indebtedness should be expressed to Dr. Makoto KIUCHI, Tsukuba City, for taking clear photographs, and also should be expressed to Mr. Katsumi AKITA, Tsu City, for drawing parts of the male genitalia.

The holotype herein designated will be deposited in the National Museum of Nature and Science, Tokyo (NSMT), and a paratype will be deposited in the National Museum, Prague (NMP).

Morphostenophanes PIC, 1925

Morphostenophanes PIC, 1925, Mél. Exot.-ent., Moulins (44): 7. Type-species: *Morphostenophanes aenescens* PIC.

Promorphostenophanes KASZAB, 1960, Annls. hist-nat. Mus. nat. hun., **52**: 277. **Syn. nov.** Type-species: *Promorphostenophanes atavus* KASZAB.

Original description of the genus *Morphostenophanes* PIC. "Corpus elongatus ♂, aut oblongo-elongatus ♀; capite paulo excurto, antennis gracilibus; thorace marginato; elytris ad basin angustatis, marginatis, inæqualibus, epipleuris apice sinuatis et attenuates; femoribus inclaviatis, tibias indetatis; prosterno lato, postice declive, medio late impresso; metasterno satis breve. ... Voisin de Stenophanes Sols., en diffère par les antennas non nettement épaissies à l'extrémeitè, le prothorax marginé sur côtés antériors, la formed du prosternum, etc."

Original description of the genus *Promorphostenophanes* compared with *Morphostenophanes* by KASZAB. "Diese Gattung steht *Morphostenophanes* PIC nahe und ist nur mit dieser Gattung verwandt. Sie unterscheidet sich von dieser Gattung durch die volkomment abweichende Flügeldeckenskulptur und durch die starker Randung des Analsegments. Bei *Morphostenophanes* PIC ist die Skulptur der Flügeldecken ans grossen, ungleichen, tuberkelargiten Polstern bestehend und besitzt keine regelmässige Längesstreifen, ausserdem ist die Analrandung feiner und auch kürzer."

Notes. KASZAB asserted that species of these two genera possess two characteristics, the elytral sculpture and anal sternite. The authors think that both characteristics are not enough for separating two independent genera. More important point is that the structures of male and female genitalia are very peculiar and common with each other.

Recently, they found a new species possessing annectent characteristics: the body is of *Promorphostenphanes* in outline, but the elytra bear rows of rounded or ovate impressions as in *Morphostenophanes*. Thus, the authors have concluded that these two genera are inseparable, and Promorphostenophanes is newly synonymized with *Morphostenophanes*.

Judging from the sclerotized genitalia in female, *Morphostenophanes* must be transferred to the tribe Cnodalonini, because of its similarity with *Pseudonautes*, *Ainu*, etc.

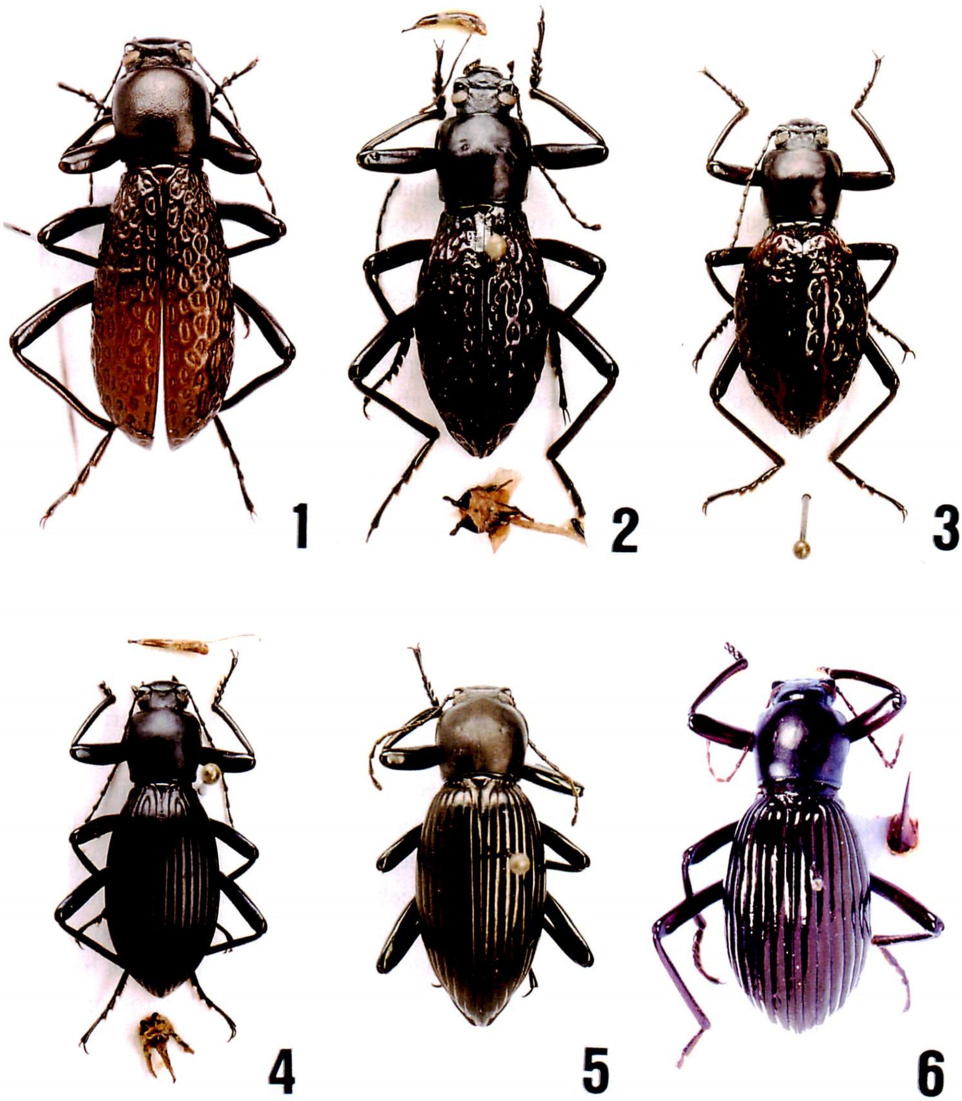
Morphostenophanes aenescens PIC, 1925

(Fig. 1)

Morophostenophanes aenescens PIC, 1925, Mél. exot.-ent., Moulins, (44): 7. Yunnan.

Morphostenophanes papillatus KASZAB, 1941

Morphostenophanes papillatus KASZAB, 1941, Annls. Mus. nat. hun. Zool., **34**: 11. Pl. 1, Fig. 4. "Szetschuan, Giufuschan, Grenze Tibet".



Figs. 1–6. Habitus of *Morphostenophanes* spp. ——1, *Morphostenophanes aenescens* Pic, male; 2, *M. elegantulus* sp. nov., male, holotype; 3, same, female, paratype; 4, *M. atavus* (Kaszab, 1960), comb. nov.; 5, *M. vietnamensis* (Kaszab), comb. nov. and stat. nov., female, paratype; 6, *M. birmanicus* (Kaszab), comb. nov. and stat. nov., female, holotype.

Morphostenophanes elegantulus sp. nov.

(Figs. 2, 3, 7–9)

Brownish black, head, outer margins of pronotum, scutellum, outer and sutural margins and basal parts of elytra, apical parts of femora and dorsal sides of tarsi almost black, major parts of elytra, particularly anterior parts and interior longitudinal parts, reddish; head and pronotum weakly, sericiously shining, scutellum, elytra and basal parts of antennae rather strongly, somewhat vitreously shining, apical parts of antennae and legs moderately shining, ventral surface alutaceous; each surface almost glabrous. Body somewhat elongated fusiform, strongly convex dorsad, distinctly constricted between pronotum and elytra. Hind wings absent.

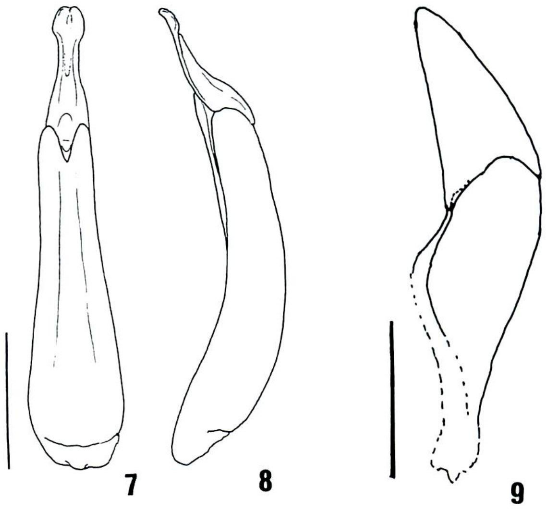
Male: Head transversely subquadrate, rather flattened, weakly covered with isodiametric microsculpture, rather densely punctulate; clypeus somewhat transversely hexagonal, weakly depressed, noticeably projected forwards, slightly emarginate in middle of apex, rounded at corners of apex, with a slightly curved transverse impression in middle before fronto-clypeal border; fronto-clypeal border strongly sulcate and gently and widely curved in middle, the sulcus becoming weaker and noticeably curved laterad, and reaching outer margins; genae subquadrate, gently raised and roundly produced antero-laterad, interior parts of preocular areas feebly concave; frons steeply inclined anteriad, very weakly depressed in middle and posterior parts, with dorsal sides of postocular areas wrinkled; diatone about one and half times the width of the transverse diameter of an eye. Eyes rather transverse, moderately convex laterad, rather elliptically inlaid into head. Antennae feebly becoming bolder apicad, weakly flattened in apical parts, reaching basal 1/5 of elytra, each segment gently becoming bolder towards apex, terminal segment somewhat hatchet-shaped, ratio of the length of each segment from base to apex: 0.94, 0.22, 1.27, 1.22, 1.36, 1.28, 1.28, 1.26, 1.15, 1.12, 1.32.

Pronotum quadrate, slightly wider than long, widest slightly before the middle; apex wider than base, nearly straight, weakly bisinuous in dorsal view, finely rimmed; base very feebly produced, finely bordered and more boldly rimmed than apex; sides steeply declined to lateral margins, which are gently produced laterad, weakly sinuous before posterior angles and rimmed, the rims very feebly crenulate; anterior angles subrectangular with rounded corners, posterior angles obtusely angulate; disc gently convex, weakly covered with isodiametric microsculpture, rather closely scattered with microscopic punctures, with a weak longitudinal impression on the median line, also with a pair of oblique impressions at slightly before the middle. Scutellum widely triangular with rounded sides, feebly raised, smooth and impunctate.

Elytra suboblongo-ovate, 1.8 times as long as wide, 2.0 times the length and 1.4 times the width of pronotum, widest at basal 2/5; dorsum rather strongly convex, highest at basal 1/3, and weakly depressed in lateral parts near base; disc smooth, scattered with microscopic punctures and microscopically aciculate, with rows of large, rounded or ovate impressions, whose central parts gently convex; sides steeply declined to lateral margins, which are bisinuous before apices; humeri not convex; apices gently produced and feebly dehiscent.

Terminal segment of maxillary palpus gently dilated apicad, with interior side slightly shorter than apical one and 2/3 of outer one in length. Prosternum weakly covered with isodiametric microsculpture, ruguloso-punctulate, strongly raised between coxal cavities, then steeply declined to prosternal process, which is reflexed; mesosternum weakly covered with isodiametric microsculpture, rugulose, finely haired in anterior part; metasternum weakly covered with isodiametric microsculpture, slightly convex and ruguloso-punctulate in lateral parts. Abdomen weakly covered with isodiametric microsculpture, longitudinally wrinkled in basal part of each sternite rounded at apex; annal sternite strongly sulcate along outer margin.

Legs slender. Profemora widened towards the middle, male protibiae elongated and curved, with interior face gouged in apical 3/7 and densely haired along each edge, protarsi rather strongly widened to each apex, tufted beneath, ratio of the length of each segment from base to apex: 0.83, 0.62, 0.59, 0.57, 2.14. Mesofemora slenderer than profemora; male mesotibi-



Figs. 7–9. Genitalia of *M. elegantulus* sp. nov. —— 7, Male genitalia in dorsal view, 8, same in lateral view; 9, female genitalia (ovipositor) in lateral view. Scale 2 mm.

ae weakly curved, with interior face feebly flattened and haired along each edge; mesotarsi moderately widened to each apex, tufted beneath, ratio of the length of each segment from base to apex: 0.97, 0.64, 0.62, 0.55, 2.36. Metafemora slenderer than mesofemora; male metatibiae nearly straight, with interior face feebly flattened and haired along each edge; metatarsi feebly widened to each apex, tufted beneath, ratio of the length of each segment from base to apex: 2.18, 1.03, 0.79, 2.62.

Male genitalia elongated subfusiform, 5.95 mm in length, 0.98 mm in width, gently curved in lateral view; fused lateral lobes 1.98 mm in length, weakly narrowed anteriad in basal half in dorsal view, strongly so at apical 1/4, then abruptly widened, with spatulate apices.

Female: Elytra more shortened and convex; ovipositor acinaciform and chitinous, 5.78 mm in length, 1.64 mm in width.

Body length: 23.2–25.5 mm.

Holotype: ♂, "Fang, Chiang Mai, N. Thailand, 25.VII.1994, Native collector." (NSMT). Paratype: 1♀, "Thailand bor., Doi Inthanon, Chiang Mai, 3. IX. 1990, Ferrero leg." (Coll. Bečvář, NMP).

Notes. The specific name is taken after its very fine shape and coloration.

Morphostenophanes atavus (Kaszab, 1960), comb. nov.

(Fig. 4)

Promorphostenophanes atavus Kaszab, 1960, Annls. hist.-nat. Mus. nat. hun., **52**: 278. (Yunnan).

Morphostenophanes vietnamicus (Kaszab, 1980), comb. and stat. nov.

(Fig. 5)

Promorphostenophanes atavus vietnamicus Kaszab, 1980, Annls. hist.-nat. mus. nat. hun., **72**: 219 (Hoang lien son: Gebirge bei Sa pa).

Morphostenophanes birmanicus (Kaszab, 1980), comb. and stat. nov.

(Fig. 6)

Promorphostenophanes atavus birmanicus Kaszab, 1980, Annls. hist.-nat. mus. nat. hun., **72**: 219 ("Burma: Shan States, Nevinson coll.", in British Museum).

Promorphostenophanes koyamai Masumoto, 1990, Elytra, Tokyo, **18**: 227 (Near Fang, Chiang Mai Prov., Northwest Thailand). **Syn. nov.**

Key to the species of the genus *Morphostenophanes*

1(6) Elytra with rows of rounded or ovate impressions.

2(3) Central parts of elytral impressions strongly convex. 19 mm, Szutschuan. ························ *M. papillatus* Kaszab

3(2) Central parts of elytral impressions not strongly convex.

4(5) Body smaller, 17–22 mm in length and narrower. Elytra less strongly shining; male legs more strongly curved. Yunnan.························ *M. aenescens* Pic

5(4) Body larger, 23.2–25.5 mm in length and wider. Elytra more strongly shining, with anterior and interior parts dark reddish. N. Thailand.························ *M. elegantulus* sp. nov.

6(1) Elytra striate devoid of rounded or ovate impressions in rows.

7(8) Body wholly black and mat, 27 mm in length. Yunnan. ························ *M. atavus* (Kaszab, 1960), comb. nov.

8(7) Body bronzy black, with head and pronotum mat, elytra more or less shining.

9(10) Elytra weakly shining, with apical parts less strongly produced ventrad, 23–25 mm in length. N. Vietnam.························ *M. vietnamicus* (Kaszab, 1980), comb. and stat. nov.

10(9) Elytra strongly and metallically shining, with apical parts more strongly produced ventrad, 22–26 mm in length. Burma. N. Thailand.························ *M. birmanicus* (Kaszab, 1980), comb. and stat. nov.

要　　　約

益本仁雄・Stanislav Bečvář：*Morphostenophanes* Pic および *Promorphostenophanes* Kaszab (Coleoptera, Tenebrionidae) について．———*Morphostenophanes* および *Promorphostenophanes* 属を検討した結果，後者は前者の新参シノニムであることがわかった．また，*Promorphostenophanes atavus vietnamicus* Kaszab, 1980 および *Promorphostenophanes atavus birmanicus* Kaszab, 1980 を *Morophostenophanes* 属の種に昇格させ，*Promorphostenophanes koyamai* Masumoto, 1990 を *M. birmanicus* Kaszab, 1980 の新参シノニムにした．さらに，1 新種 *Morphostenophanes elegantulus* sp. nov. を記載し，最後に全種の検索表を提示した．

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New Tenebrionid Beetles from Taiwan (3)

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Abstract Five new tenebrionid species are described from Taiwan under the names: *Boletoxenus yichingae* sp. nov., *Foochounus manmiaoae* sp. nov., *Plesiophthalmus anmashanus* sp. nov., *Plesiophthalmus paiwanus* sp. nov. and *Plesiophthalmus fushanus* sp. nov.

In the first paper of this series, three new Taiwanese tenebrionid species were described and two new synonyms were proposed (MASUMOTO *et al.*, 2005). And in the previous paper, two new species were also described (MASUMOTO *et al.*, 2007). In this paper, the authors are going to describe five more new species from Taiwan.

Before going further into details, they would like to express their cordial acknowledgements to Miss Yi-Ching YU, Taipei City Zoo, for offering the materials. Indebtedness should be expressed to Dr. Akiko SAITO, Natural History Museum and Institute, Chiba and Mr. Jing-Fu TSAI, National Chung Hsing University, for offering invaluable materials. They also thank Dr. Makoto KIUCHI, Tsukuba City, for taking clear photographs inserted in this paper.

The abbreviations used herein are as follows: NMNST = National Museum of Natural Science, Taichung; NSMT = National Museum of Nature and Science, Tokyo; NHMIC = Natural History Museum and Institute, Chiba.

Descriptions of New Species

Boletoxenus yichingae sp. nov.

(Figs. 1–2, 5, 11, 13–14)

Brownish black, anterior margins of head and pronotum, antennae, and legs dark reddish brown; dorsal surface and major parts of ventral surface dull, ventral sides of head and neck gently shining; each surface almost glabrous, antennae and legs clothed with fine hairs, apices and ventral sides of pronotal horns with rather long hairs; dorsal surface covered with yellowish secretion. Body robust, oblong-ovate, strongly convex above.

Head transversely elliptical, rather flattened, covered with isodiametric microsculpture; clypeus transversely elliptical, rugoso-punctate, with a transverse ridge at anterior 1/5, which is interrupted medially, and forms a pair of upright horns; fronto-clypeal border widely U-shaped and deeply impressed; genae rugoso-punctate, raised anteriad, subrectangularly produced laterad, with a tooth near each anteriormost; frons covered with umbilicate punctures, with a pair of tubercles at the level of the midst of eyes, diatone three times the width of an eye diameter; vertex coarsely punctate, the punctures smaller and closer posteriad and laterad, bordered from frons by a bisinuous ridge, whose anterior parts are steeply inclined. Eyes subreniform in dorsal view, gently convex laterad, obliquely inlaid into head. Antennae feebly subclavate, 10th segment widest, reaching basal 1/3 of pronotum, ratio of the length of each segment from base to apex: 0.28, 0.12, 0.26, 0.17, 0.17, 0.16, 0.16, 0.17, 0.24, 0.26, 0.24.

Pronotum subtrapezoidal, about twice as wide as long, armed with a pair of long horns in male (strongly tuberculate in female); apex nearly straight widely in medial part and strongly curved anteriad in lateral parts, not bordered; base gently produced in medial part, widely sinuous in lateral parts; sides steeply declined to lateral margins, which are flattened and noticeably serrate (with 9–10 serrations); front angles acutely projected anteriad, hind angles acutely angulate and gently projected; disc strongly convex, irregularly covered with punctures and granulations, also with tubercles in medial and lateral parts, area between and anterior parts of horns rather smooth, covered with isodiametric microsculpture, scattered with shallow large punctures; horns in male located at anterior 1/3, forward-pointing, gouged at interior sides, and haired on antero-ventral sides and at the apices. Scutellum subcordate, slightly convex, weakly covered with isodiametric microsculpture, sparsely punctulate.

Elytra nearly as long as wide, widest at the middle; dorsum strongly convex, highest slightly before the middle; disc with rows of small but strong punctures, which are rather closely set, and also with rows of small tubercules along rows of punctures; intervals with large, irregular tubercles, which often form ridges in interior parts; sides steeply declined to lateral margins, which are bordered by rows of punctures, and more finely serrate than pronotum; humeri swollen; apices very slightly produced.

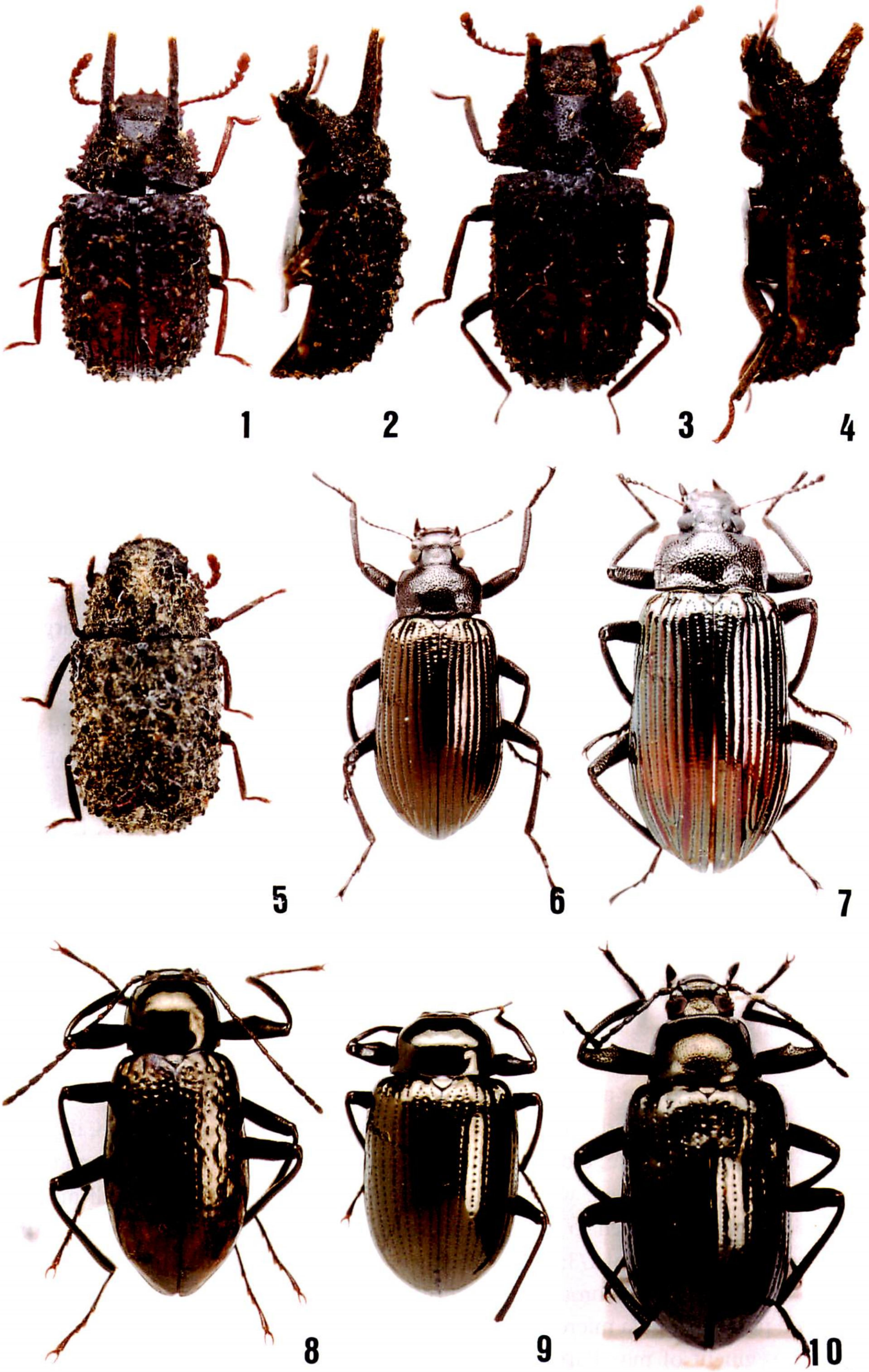
Anal sternite ridged along outer margin. Legs rather slender for the members of this genus; femora with two ridges on ventral sides; tibiae feebly curved apicad; tarsi compressed, ratios of the lengths of pro-, meso- and metatarsal segments: 0.06, 0.05, 0.07, 0.08, 0.39; 0.07, 0.06, 0.08, 0.09, 0.37; 0.07, 0.06, 0.07, 0.51.

Male genitalia slender, 1.8 mm in length, 0.4 mm in width, gently curved in lateral view; fused lateral lobes 0.3 mm in length, elongated triangular in dorsal view, with apices slightly bent ventrad.

Body length: 6.3–7.3 mm.

Holotype: ♂, "Taiwan: Ilan, Fushan Botanical Garden (福山植物園), 20. X. 2006, leg. C.-F. LEE" (NMNST). Paratypes: 8 exs., same data as for the holotype.

Notes. This new species resembles *Boletoxenus formosanus* MASUMOTO, 1982, (Figs. 3–4, 12, 15–16), from Meifeng, Nantou Hsien, Central Taiwan, but can be easily distinguished from the latter by several morphological features: head with a pair of upright, thin triangular teeth along apex in male, and antennae bolder with fifth to tenth segments shorter than wide; pronotum widest at the base, with lateral margins more strongly serrate, and also with a pair of horns



Figs. 1–10. Habitus of species. —— 1–2, *Boletoxenus yichingae* sp. nov., holotype, male; 3–4, *B. formosanus* MASUMOTO, male; 5, *B. yichingae* sp. nov., paratype, female; 6, *Foochounus manmiaoae* sp. nov., holotype, male; 7, *F. sulcatus* (KASZAB), male; 8, *Plesiophthalmus anmashanus* sp. nov., holotype, male; 9, *P. paiwanus* sp. nov., holotype, male; 10, *P. fushanus* sp. nov., holotype, female.

slenderer and forward-pointing, hairs in anterior-ventral parts of horns longer and denser, those on the summits of horns longer; elytra shorter, with tubercles on the third intervals larger and seven to nine in number (smaller and 12 to 14 in *B. formosanus*); legs shorter; male genitalia smaller, about 1.8 mm in length (2.8 mm in *B. formosanus*), with lateral lobes wider, not bent ventrad in middle.

This specific name is given after Miss Yi-Ching YU, who reared larvae of this new species to adults.

Foochounus manmiaoae sp. nov.

(Figs. 6, 17, 19–20, 23)

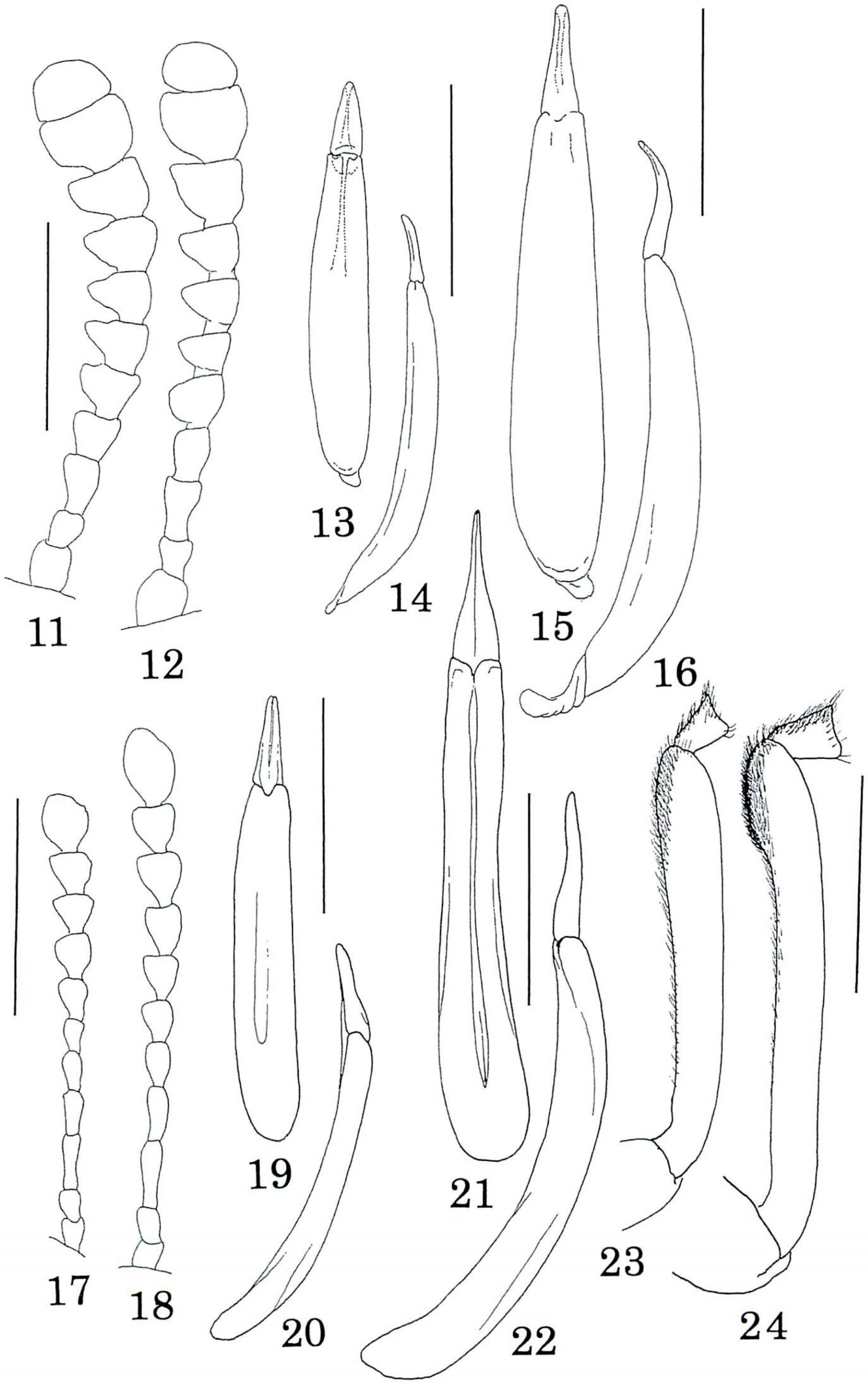
Piceous, anterior part of head, antennae, mouth parts and legs slightly lighter in colour; head and pronotum moderately shining, elytra strongly, metallically shining, major parts of ventral surfaces alutaceous; each surface glabrous. Body oblong ovate, gently convex dorsad.

Head subpentagonal, gently raised posteriad, rather closely and irregularly punctate, the punctures becoming smaller in apical part and behind vertex; clypeus rather transversely hexagonal, feebly depressed in basal part, weakly convex in middle, bent in apical part and truncate in front, fronto-clypeal border not defined; genae flattened in anterior parts, depressed in posterior parts near eyes; areas along eyes deeply sulcate; frons rather wide, scattered with larger punctures than in other areas, each with a minute hair at the centre; diatone about twice the width of eye diameter; vertex feebly swollen. Eyes slightly transverse, moderately produced laterad, roundly inlaid into head. Antennae feebly clavate, reaching basal 1/3 of pronotum, 2nd segment smallest and 11th largest, ratio of the length of each segment from base to apex: 0.15, 0.12, 0.26, 0.18, 0.16, 0.15, 0.15, 0.17, 0.17, 0.18, 0.21.

Pronotum subquadrate, 1.43 times as wide as long, widest at apical 2/5; apex feebly, evenly emarginate, finely rimmed in lateral parts; base weakly produced in middle, gently sinuous in lateral parts, bordered by rows of punctures; sides widely grooved along lateral margins, which are irregularly serrate; front angles subrectangular with rounded corners, hind angles subrectangular with acute corners; disc gently convex, rather closely punctate, the punctures bigger than those on head, with a weak, curved impression at the centre near base, and also with a pair of vague impressions near base. Scutellum triangular with rounded sides, sparsely scattered with minute punctures.

Elytra 1.71 times as long as wide, about four times the length and 1.46 times the width of pronotum, widest at apical 3/7; dorsum rather strongly convex, highest at basal 3/8, depressed in basal parts; disc punctato-striate, the striae fine, the punctures in striae closely set and notching intervals; intervals feebly convex, weakly micro-aciculate, sparsely scattered with microscopic punctures; sides steeply declined to deeply bordered lateral margins, which are finely rimmed, horizontally compressed at basal 1/3; humeri feebly swollen; apices weakly produced.

Mentum subhexagonal, glabrous, with a curved ridge in anterior 1/3, areas behind the ridge steeply inclined posteriad; gula microshagreened, with a pair of impressions along the borders of neck; terminal segment of maxillary palpi securiform with curved outer side about twice the length of inner, 1.2 times the length of apical. Prosternal process rather large and sharply pointed posteriad. Mesosternum raised in V-shape with both apices rather sharply pointed. Metasternum gently convex in lateral parts. Abdominal sternites punctate and covered with isodiametric



Figs. 11–24.——11, 13–14, *Boletoxenus yichingae* sp. nov., male; 12, 15–16, *B. formosanus* MASUMOTO, male; 17, 19–20, 23, *Foochounus manmiaoae* sp. nov., male; 18, 21–22, 24, *F. sulcatus* (KASZAB), male; 11, 12, 17, 18, right antenna; 13, 15, 19, 21, genitalia (dorsal view); 14, 16, 20, 22, same (lateral view); 23–24, protibia. Scales = 1 mm.

microsculpture, segment I to middle of III wrinkled.

Legs medium-sized; protibiae weakly curved ventrad, haired in apico-ventral parts; mesotibiae more strongly curved than protibiae, haired in apico-ventral parts; metatibia nearly straight, haired in apico-ventral parts: ratios of the lengths of pro-, meso- and metatarsal segments: 0.26, 0.16, 0.12, 0.14, 0.68; 0.28, 0.21, 0.17, 0.13, 0.63; 0.48, 0.21, 0.16, 0.61.

Male genitalia slender, 1.83 mm in length, 0.26 mm in width, gently curved in lateral view; fused lateral lobes 0.47 mm in length, longitudinally impressed on the midline.

Body length: 7.3–8.0 mm.

Holotype: ♂, "Shuanliu (雙流), Pingtung Hsien, S. Taiwan, 4. V. 2005, K. MASUMOTO, J.-F. TSAI and W.-Z. CHEN leg." (NMNST). Paratypes: 4 exs., same data as the holotype; 3 exs., "Kenting Park, Pingtung Hsien, S. Taiwan, 23–26. III. 2006, K. MASUMOTO, J.-F. TSAI and T.-C WANG leg."

Notes. This new species closely resembles *Foochounus sulcatus* (KASZAB, 1941), (Figs. 7, 18, 21–22, 24), from "Kosempo" and "Taihorinsho", Taiwan, but can be distinguished from the latter by the smaller and slenderer body, the pronotum with lateral margins not flattened, and the pro- and mesotibiae neither strongly curved nor tufted in apical parts of interior faces.

The specific name is given in honor of Dr. Manmiao YANG, National Chung Hsing University, who has been supporting the authors' research in Taiwan.

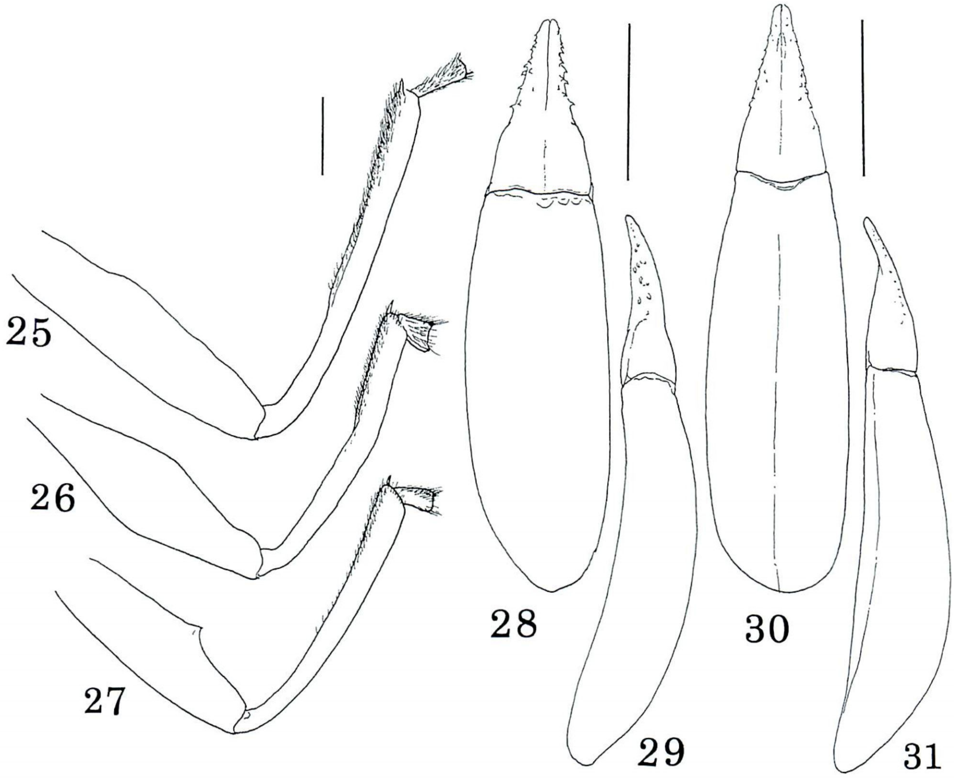
Plesiophthalmus anmashanus sp. nov.

(Figs. 8, 25, 28–29)

Brownish black, with head, pronotum, scutellum, elytra and major parts of legs bearing coppery tinge, antennae, mouth parts, abdomen, basal parts of femora and tarsi dark brown; anterior parts of head, pronotum, scutellum, legs and metasternum moderately shining, posterior parts of head, elytra weakly, somewhat sericeously shining, abdomen rather alutaceous; each surface almost glabrous. Body oblong-ovate, strongly convex dorsad.

Head subdecagonal, weakly covered with isodiametric microsculpture, rather closely scattered with small punctures; clypeus transverse, gently inclined forwards, sparsely pubescent in apical part, fronto-clypeal border finely sulcate, weakly curved in middle, rather strongly curved in lateral parts, and extending to outer margins; genae obliquely rhombic, rather strongly raised outwards, with outer margins obtusely produced; frons feebly convex in middle, gently inclined forwards, depressed in areas behind fronto-clypeal border on each side, feebly impressed along median line in posterior part, with area between eyes sparsely punctate; diatone 1.52 times the width of eye diameter; dorsal part of neck closely, finely punctate and haired. Eyes transversely subreniform in dorsal view, gently convex laterad, roundly inlaid into head. Antennae filiform, reaching basal 1/3 of elytra, ratio of the length of each segment from base to apex: 0.56, 0.18, 1.54, 0.78, 1.09, 0.79, 0.74, 0.68, 0.66, 0.61, 0.81.

Pronotum rather trapezoidal, 1.33 times as wide as long, gently produced laterad, widest at the middle; apex feebly emarginate and rimmed, sinuous in lateral parts; base weakly produced in middle, truncate opposite of scutellum, gently sinuous on each side; sides steeply declined to lateral margins, which are finely rimmed, the rims invisible from above; front angles acutely projected anteriad, hind angles obtusely angulate; disc rather strongly convex, very weakly, obliquely impressed at basal 1/3 on each side, feebly covered with isodiametric microsculpture,



Figs. 25–31. —— 25, 28–29, *Plesiophthalmus anmashanus* sp. nov. male; 26, 30–31, *P. paiwanus* sp. nov., male; 27, *P. fushanus* sp. nov., female; 25–27, profemur & protibia; 28, 30, genitalia (dorsal view); 29, 31, same (lateral view). Scales = 1 mm.

fairly closely scattered with microscopic punctures, each with a decumbent short hair. Scutellum triangular with feebly rounded sides, slightly convex, weakly covered with isodiametric microsculpture, sparsely scattered with small punctures.

Elytra subovate, 1.67 times as long as wide, 3.13 times the length and 1.60 times the width of pronotum, widest at apical 3/7; dorsum strongly convex, highest at basal 3/7; disc covered with isodiametric microsculpture, finely, rather transversely aciculate, with rows of punctures, which are sparsely, irregularly set and finely striated, the striae often disappeared, the punctures in antero-lateral parts becoming larger and coarser and often forming foveae; intervals very weakly convex, scattered with microscopic punctures, which are sparser than those on pronotum but almost of the same size; humeri weakly swollen; apices feebly, roundly produced.

Male anal sternite sparsely pubescent, weakly emarginate at apex. Profemora with anterior face angulate at apical 2/5; male protibiae gently prolonged and curved, with interior face gouged in basal 3/7; ratios of the lengths of pro-, meso- and metatarsal segments: 0.77, 0.38, 0.31, 0.27, 1.18; 1.06, 0.54, 0.48, 0.44, 1.22; 1.89, 0.62, 0.36, 1.27.

Male genitalia subfusiform, 3.16 mm in length, 0.67 mm in width, gently curved in lateral view; fused lateral lobes nib-shaped, 1.08 mm in length, with lateral margins serrated.

Body length: 12.2–12.5 mm.

Holotype: ♂, "Taiwan: Taichung, Anmashan (鞍馬山) 1. VII. 2005, leg. C.-F. Lee" (in coll. NMNST). Paratypes: 8 exs., same data as the holotype.

Notes. This new species resembles *Plesiophthalmus kondoi* (MASUMOTO, 1981), originally described from Taihei-zan (Taipingshan), Ilan Hsien, and Meifeng, Nantou Hsien, Taiwan, but can be distinguished from the latter by the body smaller, with the pronotum acutely projected at front angles, the elytra shorter, and the male protibiae gently prolonged and curved, with interior face gouged in basal 3/7.

The specific name is given after the mountain, where the type series were collected.

Plesiophthalmus paiwanus sp. nov.

(Figs. 9, 26, 30–31)

Brownish black, with posterior parts of head, pronotum, scutellum and elytra bearing coppery tinge, antennae, mouth parts and major parts of legs dark brown; anterior parts of head, legs moderately shining, posterior parts of head, pronotum, scutellum and elytra metallically and somewhat vitreously shining, ventral parts mostly alutaceous; each surface almost glabrous. Body oblong-ovate, strongly convex dorsad.

Head transversely subelliptic; clypeus rather trapezoidal, bent ventrad in anterior half, sparsely pubescent in apical part, fairly closely punctulate, fronto-clypeal border finely sulcate, nearly straight in middle, rather strongly curved anteriad in lateral parts, and extending to outer margins; genae somewhat triangular, gently raised outwards, with outer margins weakly produced; frons rather steeply inclined, impunctate in medial part, punctulate in lateral and posterior parts; diatone about half the width of eye diameter. Eyes somewhat comma-shaped in dorsal view, convex laterad, rather obliquely inlaid into head. Antennae subfiliform, reaching basal 1/3 of elytra, ratio of the length of each segment from base to apex: 0.36, 0.14, 0.88, 0.47, – (lost in the holotype), 0.69, 0.56, 0.55, 0.53, 0.58.

Pronotum somewhat trapezoidal, 1.56 times as wide as long, gently produced laterad, widest at the middle, base wider than apex; apex feebly emarginate and rimmed, feebly bulged on each side; base weakly produced in middle, feebly truncate opposite of scutellum, gently sinuous on each side; sides rather steeply declined to lateral margins, which are clearly rimmed, the rims visible from above; front angles rectangular, hind angles obtusely angulate; disc rather strongly, slightly transversely convex, very weakly, obliquely impressed at basal 1/4 on each side, scattered with microscopic punctures, which are smaller and sparser than on the head, and each with a decumbent minute hair. Scutellum triangular with rounded sides, flattened, sparsely scattered with microscopic punctures.

Elytra subovate, 1.38 times as long as wide, 3.46 times the length and 1.48 times the width of pronotum, widest at basal 4/9; dorsum strongly convex, highest at basal 1/3; disc very weakly, rather transversely aciculate, with rows of punctures, which are small but clear, and connected with one another by shallow grooves or fine striae, these often disappeared; intervals weakly convex, scattered with microscopic punctures, which are sparser and smaller than on pronotum; humeri weakly swollen; apices feebly produced.

Male anal sternite pubescent in apical part, emarginate at apex. Profemora rather noticeably becoming bolder towards middle, with anterior face weakly angulate at apical 2/5; male protibiae rather strongly curved, transversely impressed on dorsal sides near base, with interior face noticeably gouged in basal 4/7 and haired in apical 3/7; male mesotibiae gently curved, with interior face weakly gouged in basal 4/9 and haired in apical 5/9; ratios of the lengths of pro-, meso- and metatarsal segments (– lost in the holotype): 0.46, – , – , – , – ; 0.48, 0.27, 0.25, 0.23, 0.96; 1.08, 0.32, 0.27, – .

Male genitalia subfusiform, 3.35 mm in length, 0.66 mm in width, gently curved in lateral view; fused lateral lobes nib-shaped, 0.95 mm in length, with lateral margins serrated.

Body length: 10.6 –11.6 mm.

Holotype: ♂, "Taiwan: Taitung, Taimali (太麻里), 5–7. VII. 2006, leg. C.-F. LEE" (NMNS). Paratype: 1 exs., "Shouka (壽卡), Taiwan, 17. VI. 1993, C.-K. YU leg." (NHMIC).

Notes. This new species somewhat resembles *Plesiophthalmus shingoi* (MASUMOTO, 1991), originally described from Chiang Mai, N. Thailand, but can be distinguished from the latter by the body smaller, the head with the diatone wider (1/3 the width of an eye in *P. shingoi*), the elytra shorter (1.6 times as long as wide in *P. shingoi*), and male genitalia neither prolonged nor spatulate at apices.

The specific name is given after a native tribe. They inhabit in the areas where the type series were collected.

Plesiophthalmus fushanus sp. nov.

(Figs. 10, 27)

Female: Piceous, with head, pronotum, scutellum and elytra bearing dark greenish tinge, antennae, mouth parts and major parts of legs feebly brownish; clypeus, pronotum, scutellum and elytra strongly shining with very weakly sericeous lustre, head except for clypeus sericeous, antennae and legs weakly shining, ventral parts mostly alutaceous; each surface almost glabrous. Body oblong-ovate, strongly convex dorsad, rather hunch-backed.

Head transversely subelliptic; clypeus rather trapezoidal, bent weakly ventrad in anterior part, sparsely pubescent in apical part, fairly closely punctate, fronto-clypeal border clearly sulcate, widely and feebly curved in middle, rather strongly curved anteriad in lateral parts, and extending to outer margins; genae oblique, gently raised outwards, with outer margins weakly produced; frons gradually inclined anteriad, sparsely punctate in lateral and posterior parts, rather densely and irregularly scattered with punctures and hairs near fronto-clypeal border; diatone almost of the same width of eye diameter. Eyes somewhat comma-shaped in dorsal view, convex laterad, roundly inlaid into head. Antennae subfiliform, reaching basal 1/5 of elytra, ratio of the length of each segment from base to apex: 0.53, 0.19, 0.78, 0.39, 0.59, 0.56, 0.61, 0.47, 0.51, 0.45, 0.56.

Pronotum subtrapezoidal, 1.54 times as wide as long, gently produced laterad, widest at base, weakly sinuous before base; apex nearly straight, bordered and finely rimmed; base weakly produced in middle, feebly truncate opposite of scutellum, gently sinuous on each side; sides rather steeply declined to lateral margins, which are bordered and finely rimmed, the rims hardly visible from above; front angles rectangular with rounded corners, hind angles obtuse but angulate; disc strongly, somewhat hemispherically convex, very weakly, obliquely impressed at basal 1/4 on each side, also weakly impressed on midline in medial half, very weakly covered with isodiametric microsculpture, scattered with small round punctures, each with a minute decumbent hair at the centre. Scutellum triangular with rounded sides, weakly raised, feebly covered with isodiametric mircrosculpture, sparsely scattered with microscopic punctures.

Elytra subovate, 1.56 times as long as wide, 3.33 times the length and 1.16 times the width of pronotum, widest at apical 4/9; dorsum strongly convex, highest at basal 1/4, depressed somewhat in a inverted Y-shape near base; disc very weakly covered with isodiametric microsculpture and feebly, rather transversely aciculate, with rows of punctures, which are small but clear, often connected with one another by shallow grooves or fine striae, and become larger, coarser and sparser in antero-lateral parts, and form foveae, the striae become deeper in 6th to 8th striae; intervals weakly convex, sparsely scattered with microscopic punctures, which are sparser and smaller than on pronotum; humeri weakly swollen; apices feebly produced.

Profemora with anterior face spined at apical 1/3; protibiae gently curved, with interior face haired in apical 3/5; mesotibiae feebly curved interiad and dorsad; metatibiae nearly straight but feebly curved dorsad; ratios of the lengths of pro-, meso- and metatarsal segments: 0.30, 0.24, 0.22, 0.21, 1.08; 0.38, 0.26, 0.23, 0.21, 1.12; 1.09, 0.32, 0.24, 1.13.

Body length: 11.6 mm.

Holotype: ♀, "Taiwan: Ilan, Fushan Botanical Garden (福山植物園), 24–26. IV. 2006, leg. C.-F. LEE" (NMNST).

Notes. This new species resembles *Plesiophthalmus nanshanchiensis* (MASUMOTO, 1981), originally described from Nanshanchi, Nantou Hsien, Taiwan, but can be distinguished from the latter by the body smaller and more strongly shining, with the pronotum straight at the apex and widest at the base, and the elytra minutely and finely punctate, widest at apical 4/9 (apical 1/3 in P. *nanshanchiensis*), not finely striate like in *P. nanshanchiensis* but with rows of punctures, though they often connected with one another by shallow grooves or fine striae.

The specific name is given after the type locality.

要約

益本 仁雄・秋田 勝己・李 奇峰：台湾産ゴミムシダマシ科の新種について（3）．———台湾産のゴミムシダマシ科の再検討を継続的におこなっている．今回は，次の5新種を記載した．*Boletoxenus yichingae* sp. nov., *Foochounus manmiaoae* sp. nov., *Plesiophthalmus anmashanus* sp. nov., *Plesiophthalmus paiwanus* sp. nov. および *Plesiophthalmus fushanus* sp. nov.である．

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Notes on the Coprophagous Scarab-beetles (Coleoptera, Scarabaeidae) from Southeast Asia (XVI)

Three New Species of *Onthophagus* (*Onthophagiellus*) from Sumatra and the Malay Peninsula

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Abstract Three new species of *Onthophagus* (*Onthophagiellus*) are described under the names of *O.* (*O.*) *tridentitibialis* sp. nov. from Sumatra, *O.* (*O.*) *sumatramontanus* sp. nov. from Sumatra and *O.* (*O.*) *suginokoichii* sp. nov. from the Malay Peninsula. In addition, *O. inermivertex* is transferred from the subgenus *Indachorius* to the subgenus *Onthophagiellus*.

Onthophagiellus, a subgenus of *Onthophagus*, was established by BALTHASAR (1935) for *O. crassicollis* BOUCOMONT as the type species. Later, KABAKOV (1994) regarded the subgenus *Paronthophagus* BALTHASAR as a junior synonym of *Onthophagiellus*. *Onthophagiellus* in the sense of KABAKOV (1994) includes 10 or so known species from the Oriental region, which are characterized by having the metatarsus with the second segment markedly shorter than the first one.

We found three undescribed *Onthophagus* species belonging to the subgenus *Onthophagiellus* from Sumatra and the Malay Peninsula in the collection of the first author, and are described in this paper.

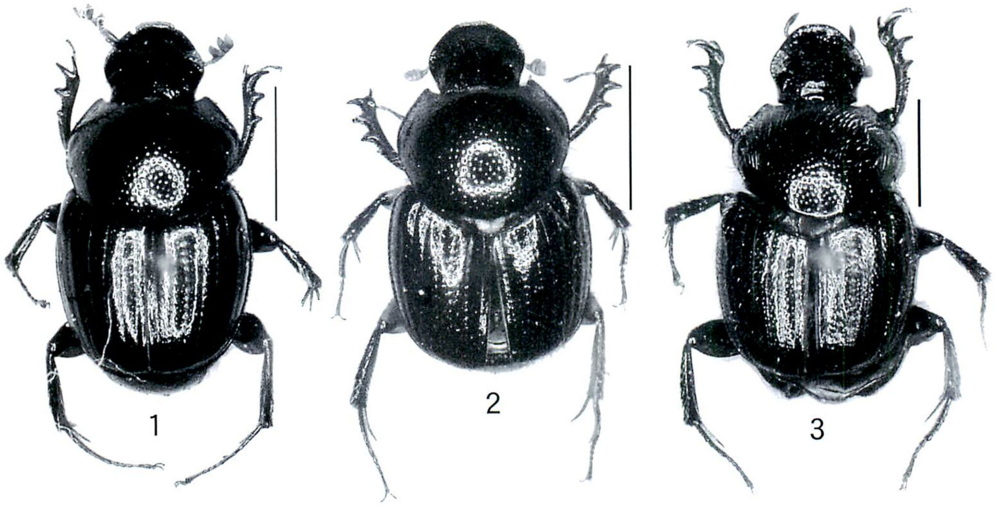
In addition, *Onthophagus inermivertex* BOUCOMONT is transferred from the subgenus *Indachorius* to the subgenus *Onthophagiellus* because it also has the second segment of metatarsus much shorter than the first one.

Onthophagus (*Onthophagiellus*) *tridentitibialis* sp. nov.

(Figs. 1, 4–8)

Length: 5.3–5.6 mm; width: 2.8–3.0 mm (n=3).

Male. Body small-sized, oblong-oval, a little convex and clearly constricted between pronotum and elytra; dorsal side shining, almost glabrous (the hairs not well perceptible in two



Figs. 1–3. Habitus of *Onthophagus* (*Onthophagiellus*) spp., scale 2 mm.—— 1, *O.* (*O.*) *tridentitibialis* sp. nov., holotype, male; 2, *O.* (*O.*) *sumatramontanus* sp. nov., holotype, male; 3, *O.* (*O.*) *suginokoichii* sp. nov., holotype, male.

specimens, probably because of the superficially defaced); ventral side also shining, partly and sparsely clothed with yellowish hairs. Color uniformly black; head and pronotum tinged with very slight metallic luster; mouth parts, palpi and antennal foot-stalks, legs reddish brown; antennal clubs yellowish brown or a little darkened.

Head transverse, sub-pentagonal in outline; clypeus well produced forward, clearly subtrapezoidal in outline, reflexed in front, truncated at apex, sides straight and less reflexed; clypeo-frontal suture completely effaced; clypeo-genal sutures barely perceptible, not distinctly carinate; genae a little produced laterad, with genal corner broadly rounded in the middle; surface shining, slightly wrinkled on clypeus, densely covered with a little indefinite small punctures, the punctures becoming clearly larger towards gena and vertex.

Pronotum not so strongly convex, about 1.3 to 1.4 times as wide as long (n=2), without a distinct longitudinal impression along midline; disc simply formed, sides well produced laterad at the middle; anterior margin emarginated and distinctly bordered; lateral margins strongly rounded at the middle, almost straight in front and slightly sinuate behind, finely bordered; basal margin obtusely angulate at the middle, without distinct marginal line; anterior angles strongly produced forward, with apices sharp; posterior angles obtuse; surface shining, somewhat sparsely covered with shallow, a little coarse and ocellate punctures, the punctures becoming clearly larger towards sides and almost effaced towards base along margin and posterior angles.

Elytra about 1.4 times as wide as long (n=2), each with eight striae, one of which is along epipleural margin; striae shallowly and a little finely impressed, with fine ridges on both sides; 7th stria parallel with 6th, not clearly curved near base; strial punctures distinct, transverse, with two transversely arranged pits on the bottom, and slightly notching both interval margins; intervals flat to very weakly convex, shining, with suture sparsely covered with fine indefinite punctures, 2nd to 8th intervals sparsely covered with fine punctures which are not clearly forming regularly arranged and longitudinal rows.

Pygidium strongly and evenly convex in central portion, carinate at base, shining, somewhat sparsely covered with coarse, ocellate and setiferous punctures. Profemora with anterior edge ordinary, lacking a slight tooth. Protibiae slender, fairly strongly curved a little prior to the middle, with three distinct external teeth which are well separated from each other, 1st tooth sharp and fairly long, 2nd a little shorter than 1st but slightly broader, 3rd clearly smaller; the remaining outer margin except for the three teeth finely denticulate; inner margin of protibia ordinary, simply curved; terminal spur strong, evenly and strongly decurved, sharp at apex. Mesotibiae slender and slightly curved; mesotarsus with first segment weakly curved, about 0.5 mm in length (n=2), about 0.8 times as long as the remaining four segments combined; inner distal end of first segment very slightly produced backward, and clearly shorter than 2nd segment; lower terminal spur a little flattened and curved internally. Metatibiae almost straight, with inner distal end strongly produced ventro-internally as a sharp spine; metatarsi with first segment elongated and distinctly curved, about 0.8 mm in length (n=2), about 1.0 to 1.1 times as long as the remaining four segments combined (n=2); inner distal end of first segment very weakly produced backward as a slight tooth.

Aedeagus rather robust in lateral view. Phallobase about 1.2 mm in length (n=1), about 0.5 mm in apical width (n=1). Parameres about 0.6 mm in length, gradually narrowing towards apices in dorsal view, with each apex not distinctly produced externally in dorsal view.

Female. Head more strongly produced forward, with clypeal margin parabolic in outline; clypeo-frontal suture distinctly carinate, the carina well procurved; clypeo-genal sutures finely defined, not carinate; surface more strongly and closely punctate, with clypeus transversely wrinkled. Protibiae clearly shorter than in male and less incurved, with four stronger external teeth. Metatibiae with inner distal end also strongly produced ventro-internally as a sharp spine.

Type series. Holotype: ♂, Harau Valley, Paya Kumbur, West Sumatra State, Indonesia, 10. III. 1991. Paratype: 1♂,1♀, the same data as the holotype.

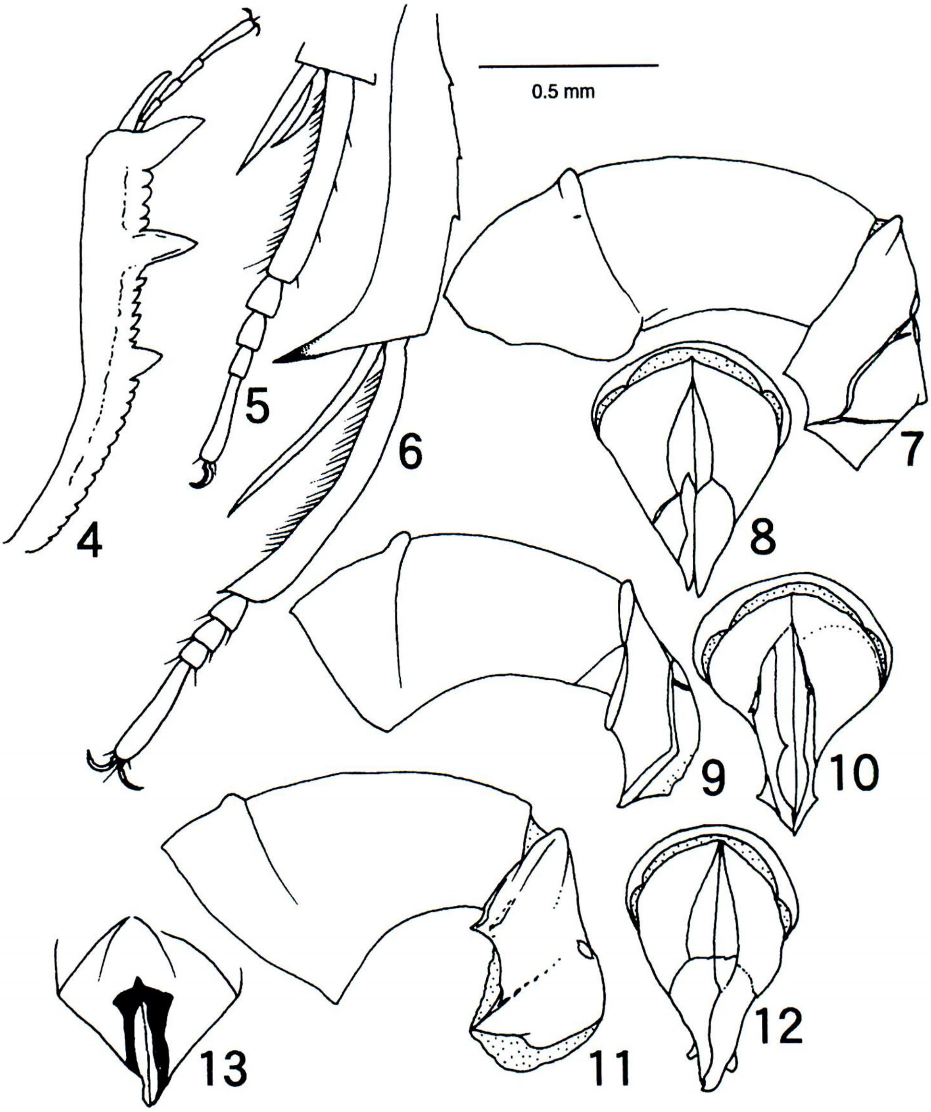
Type depository. The holotype is preserved in the collection of the Zoological Museum, Bogor, Indonesia.

Further specimen examined. 1♂, Mt. Bawang, West Kalimantan State, Indonesia, VIII. 1990.

Distribution. Sumatra, Borneo.

Etymology. The specific name means that this species has three external teeth on the protibia.

Notes. The present new species is similar to *Onthophagus* (*Onthophagiellus*) *falculatus* BOUCOMONT, 1914 from Sumatra, but can easily be distinguished from the latter by the following characters: 1) body is much smaller; 2) protibia has three distinct external teeth, whereas in *O. falculatus*, the protibia has four distinct external teeth; 3) metatibia is very strongly produced as a sharp spine at the inner distal end, whereas in *O. falculatus*, the metatibia is ordinary, not very strongly produced as a sharp spine at the inner distal end; 4) male genitalia is obviously smaller, with the parameres different-shaped. The present new species is also related to *Onthophagus inermivertex* BOUCOMONT, 1921 from the Philippines, but can be distinguished from the latter in having the protibia clearly slenderer, the clypeus of head strongly produced forward and distinctly narrowed anteriad, and the eyes very distinctly narrower and smaller.



Figs. 4–8. *Onthophagus* (*Onthophagiellus*) *tridentitibialis* sp. nov., scale 0.5 mm. 4, right protibia, dorsal view; 5, right mesotarsus, dorsal view; 6, right metatibia, dorsal view; 7, aedeagus, lateral view; 8, parameres, dorsal view. Figs. 9–10. *Onthophagus* (*Onthophagiellus*) *sumatramontanus* sp. nov., scale 0.5 mm. 9, aedeagus, lateral view; 10, parameres, dorsal view. Figs. 11–13. *Onthophagus* (*Onthophagiellus*) *suginokoichii* sp. nov., scale 0.5 mm. 11, aedeagus, lateral view; 12-13, parameres, dorsal view (12), ventral view (13).

Onthophagus* (*Onthophagiellus*) *sumatramontanus sp. nov.

(Figs. 2, 9–10)

Length: 4.4–4.7 mm; width: 2.5–2.7 mm (n=3).

Body oblong-oval, not so strongly convex and obviously constricted between pronotum and elytra; dorsal side shining, sparsely clothed with semi-recumbent fine yellowish hairs; ventral side also shining, partly and sparsely clothed with similar hairs as those on dorsum. Color uniformly black on the dorsal side, almost reddish brown to yellowish brown on the ventral side; head and pronotum tinged with weak greenish luster; prothorax bright yellowish brown or lemon yellow on the ventral side; mouth parts, palpi and antennae reddish brown; club segments of antenna sometimes a little darkened; femora brightly yellowish brown or lemon yellow except for each narrow black apical portion; protibiae reddish brown; meso- and metatibiae black though a little reddish.

Male. Head transverse, sub-pentagonal in outline; clypeus well produced forward, subtrapezoidal in outline, reflexed in front, truncated at apex, sides straight and a little reflexed; clypeo-frontal suture completely effaced or vaguely carinate; clypeo-genal suture barely perceptible, not distinctly carinate; genae a little produced laterad, with genal corner broadly rounded at the middle; surface shining, slightly wrinkled on clypeus, densely covered with small but strong punctures, the punctures partly becoming a little indefinite and shallower.

Pronotum moderately convex, about 1.3 to 1.4 times as wide as long (n=3), without a distinct longitudinal impression along midline; disc simply formed, sides well produced laterad at the middle; anterior margin emarginated and distinctly bordered; lateral margins strongly rounded in the middle, almost straight in front and a little sinuate behind, with fine marginal lines; basal margin bluntly angulated at the middle, without distinct marginal line; anterior angles strongly produced forward, with apices sharp; posterior angles obtuse; surface shining, sparsely covered with shallow, a little coarse and ocellate setiferous punctures, the punctures becoming clearly larger towards sides and also almost effaced towards base along margin and posterior angles

Elytra about 1.4 times as wide as long (n=2), each with eight striae, one of which is along epipleural margin; striae shallowly and a little finely impressed, with fine ridges on both sides; 7th stria parallel with 6th, not clearly curved near base; strial punctures distinct, transverse, with two transversely arranged pits on the bottom, and slightly notching both interval margins; intervals flat to very weakly convex, shining, with suture sparsely covered with very fine indefinite punctures, 2nd to 8th intervals sparsely covered with fine punctures which are not forming regularly arranged and longitudinal rows of punctures.

Pygidium evenly and strongly convex in central portion, carinate at base, shining, somewhat sparsely and a little irregularly covered with coarse, ocellate and setiferous punctures. Profemora with anterior edge bearing a slight tooth at near basal half. Protibiae slender, evenly incurved, with four distinct external teeth which are well separated from each other, 1st tooth sharp and fairly long, 2nd slightly shorter than 1st though slightly broader, 3rd smaller than 2nd, 4th very small; the remaining outer margin except for the four teeth finely denticulate; inner margin of protibia simply and evenly curved, with distal end weakly swelling; terminal spur strong, evenly and strongly decurved, sharp at apex. Mesotibiae slender and slightly curved; mesotarsi with first segment weakly curved, about 0.4 mm in length (n=3), about 0.8 times as long as the remaining four segments combined; inner distal end of first segment very slightly produced backward, and clearly shorter than 2nd segment; lower terminal spur ordinary. Metatibiae almost straight, with distal inner end ordinary; metatarsi with first segment elongated and a little curved, about 0.8 mm in length (n=3), about 1.3 times as long as the remaining four segments combined (n=3); inner distal end of first segment very weakly produced backward as a slight tooth.

Aedeagus small. Phallobase about 1.0 mm in length (n=1), about 0.5 mm in apical width (n=1). Parameres about 0.6 mm in length, strongly narrowing towards apices at the middle in dorsal view, with each apex very slightly produced externally as a fairly small tooth in dorsal view.

Female. Unknown.

Type Series. Holotype: ♂, Pangkaran, Paya Kumbur, West Sumatra State, Indonesia, 10. V. 1990. Paratypes: 2 ♂♂, the same data as for the holotype.

Type depository. The holotype is preserved in the collection of the Zoological Museum, Bogor, Indonesia.

Distribution. Sumatra.

Etymology. This specific name is taken from the locality meaning mountainous region of Sumatra Island.

Notes. The present new species is closely related to *Onthophagus* (*Onthophagiellus*) *falculatus* BOUCOMONT, 1914 from Sumatra, but can easily be distinguished from the latter by the following characters: 1) body is much smaller; 2) ventral side is reddish brown to yellowish brown, with prothorax and all the femora bright yellowish brown or lemon yellow, whereas in *O. falculatus*, the ventral side is almost uniformly black; 3) protibiae are evenly and simply formed on the inner margin, whereas in *O. falculatus*, these are slightly but distinctly tumid at basal third; 4) protibiae are clearly slenderer; 5) in male genitalia, phallobase is clearly shorter and parameres are strongly narrowed from the middle to the apices in dorsal view.

***Onthophagus* (*Onthophagiellus*) *suginokoichii* sp. nov.**

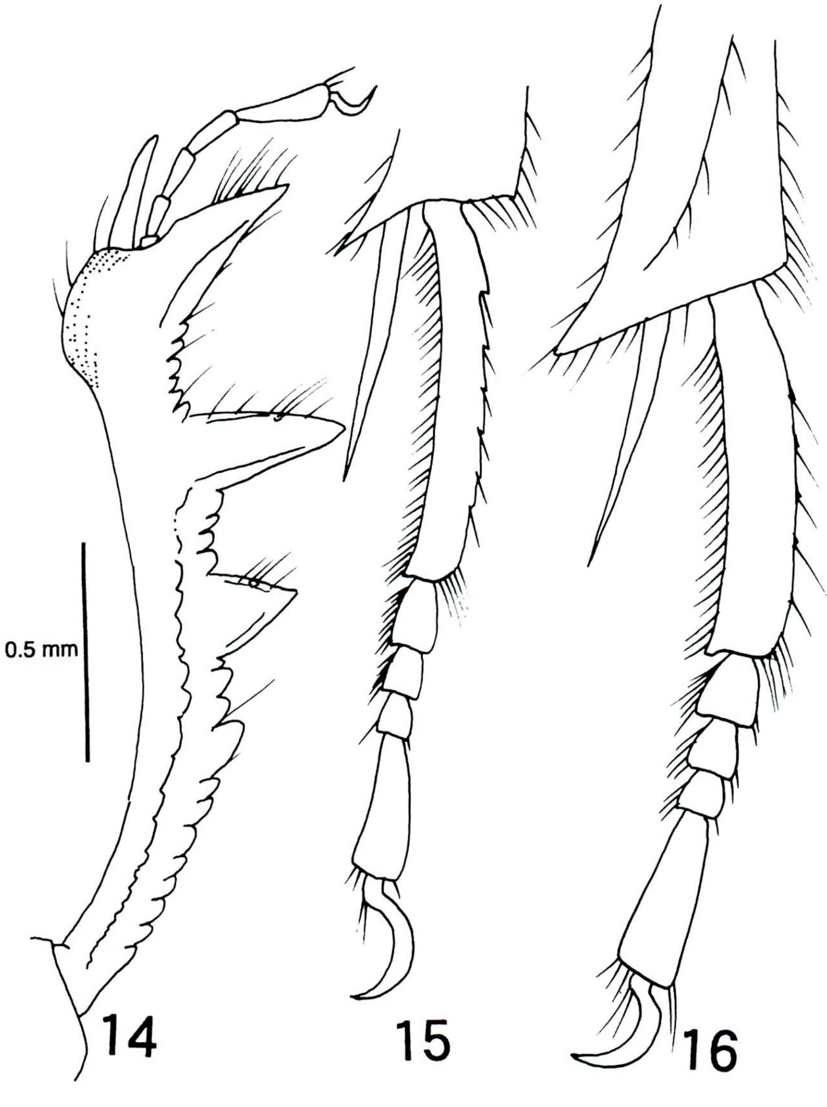
(Figs. 3, 11–16)

Length: 6.6 mm; width: 3.6 mm (n=1).

Male. Body oblong-oval, rather strongly convex and obviously constricted between pronotum and elytra; dorsal side shining, distinctly and a little closely clothed with semi-recumbent pale yellowish hairs; ventral side also shining, partly and sparsely clothed with similar hairs as those on dorsum. Color uniformly black; head and pronotum without metallic luster; mouth parts, palpi and antennal foot-stalks reddish brown; club segments of antenna pale reddish brown to yellowish brown; legs more or less reddish, with tarsi paler.

Head slightly transverse; clypeus a little strongly produced forward, sub-trapezoidal in outline, with sides almost straight and reflexed, apex also reflexed, feebly rounded; clypeo-frontal suture obtusely carinate, the carina weakly procurved; clypeo-genal sutures finely defined, not distinctly carinate; genae a little produced laterad with margin broadly rounded near the middle; surface weakly shining and slightly micro-granulose, weakly wrinkled on clypeus, sparsely covered with double punctures, one of which is coarse and bearing a distinct hair, another fine to small, a little indefinite.

Pronotum strongly convex, about 1.3 times as wide as long (n=1), with a distinct longitudinal impression along midline in basal half; disc simply formed, sides well produced laterad at the middle; anterior margin emarginated and distinctly bordered; lateral margins strongly rounded at the middle, almost straight in front and slightly sinuate behind, with fine marginal lines; basal margin obtusely angulate at the middle, without distinct marginal line; anterior angles



Figs. 14–16. *Onthophagus* (*Onthophagiellus*) *suginokoichii* sp. nov., scale 0.5 mm. 14, right protibia, dorsal view; 15, right mesotarsus, dorsal view; 16, right metatibia, dorsal view.

strongly produced forward, with apices distinctly sharp; posterior angles obtuse; surface shining, though slightly micro-granulose, moderately densely covered with strong, a little coarse and ocellate punctures, the punctures becoming clearly larger towards sides and almost effaced towards base along margin and posterior angles.

Elytra about 1.6 times as wide as long (n=1), each with eight striae, one of which lies along epipleural margin; striae strongly and widely impressed, with fine ridges on both sides; 7th stria almost parallel with 6th, not clearly curved near base; strial punctures distinct, transverse, with two transversely arranged pits on the bottom, and slightly notching both interval margins; intervals almost flat to feebly convex, shining, with suture bearing a single longitudinal row of small setiferous punctures in posterior portion, 2nd to 7th intervals slightly but clearly wrinkled, bearing two or so a little regularly arranged and longitudinal rows of strong setiferous punctures which are a little smaller than those on pronotum, 8th bearing three or four irregularly arranged and longitudinal rows of similar setiferous punctures.

Pygidium strongly convex in central portion, carinate at base, shining, closely covered with coarse ocellate setiferous punctures. Profemora with anterior edge almost simple, lacking a distinct tooth. Protibiae slender, well incurved, with four external teeth which are well separated from each other, 1st tooth sharp, fairly elongated and a little decurved, 2nd a little shorter and not wider than 1st, 3rd smaller than 2nd, 4th very small; inner margin of protibia simply and evenly curved, with a slight swelling at distal end; terminal spur fairly strong, evenly and strongly decurved, sharp at apex. Mesotibiae slender and slightly curved; mesotarsi with first segment not so long, weakly curved, about 0.7 mm in length (n=1), about 0.7 times as long as the remaining four segments combined; 5th clearly larger and well broaened towards apex; inner distal end of first segment not produced backward; lower terminal spur ordinary. Metatibiae almost straight, with inner distal end distinctly produced as a sharp spine; metatarsi with first segment elongated and well arcuate, about 0.8 mm in length (n=1), about 0.8 times as long as the remaining four segments combined (n=1), and about 5 times as long as the 2nd segment; inner distal end of first segment very slightly produced backward; 2nd to 4th segments clearly short, 5th clearly larger and well broadened towards apex.

Aedeagus small. Phallobase about 1.1 mm in length (n=1), about 0.5 mm in apical width (n=1). Parameres elongated in dorsal view, about 0.7 mm in length, rather gradually narrowed from base to apices in dorsal view, with each apex slightly produced externally as a small tooth in dorsal view.

Female. Unknown.

Type series. Holotype: ♂, Frazer's Hill, Malay Peninsula, Malaysia, 27. III. 1979, K. SUGINO leg.

Distribution. Malay Peinsula.

Type depository. The holotype is deposited in the collection of the Department of Zoology, National Science Museum (Natural History), Tokyo.

Etymology. The specific name is dedicated to Mr. Koichi SUGINO, a friend of the first author who contributed to our present study.

Notes. The present new species is closely related to *Onthophagus* (*Onthophagiellus*) *falculatus* BOUCOMONT, 1914 from Sumatra, but can easily be distinguished from the latter by the following characters: 1) 1st segment of metatarsus is distinctly shorter than the following four segments combined, whereas in *O. falculatus*, it is clearly longer than the four segments combined; 2) inner distal end of metatibia is distinctly produced as a sharp spine, whereas in *O. falculatus*, it is ordinary, not strongly produced as a sharp spine; 3) 5th segments of meso- and metatarsi are clearly larger and well broadened towards apex, with the craws distinctly large, whereas in *O. falculatus*, they are ordinary sized and not well broadened towards apex, with the craws are ordinary; 4) dorsal side is remarkably clothed with distinct and rather dense hairs, whereas in *O. falculatus*, it is not so remarkably clothed with distinct and rather dense hairs; 5) head and pronotum are slightly micro-granulose and weakly shining, whereas in *O. falculatus*, they are a little sparsely punctuate and strongly shining; 6) in male genitalia, phallobase is more robust, and parameres are fairly narrower in dorsal view.

Onthophagus (*Onthophagiellus*) *inermivertex* Boucomont

Onthophagus inermivertex Boucomont, 1921, Bull. Soc. Ent. Fr., 1921: 90; Boucomont, 1924, Phil. J. Sci., **24**: 671, 679.

Onthophagus (*Indachorius*) *inermivertex*: Balthasar, 1963, Monog. Scarab., **2**: 392.

Specimens examined. 1♂, "Iligan, Mindanao, Baker", (type, MNHN); 1♀, "Dapitan, Mindanao, Baker", (type, MNHN); 1♂, Atimonan, Quezon, Luzon Island, the Philippines, 24. III. 1978, K. Okubo leg.

Distribution. Philippines (Minadanao, Luzon [new locality]).

Notes. Balthasar (1963) treated this species as a member of the subgenus *Indachorius*. However, this species does not share the following subgeneric characteristics of *Indachorius*: the prothorax shallowly excavated in the antero-ventral portion, the external edge of the excavation strongly carinated. In contrast, this species has the metatarsi with the second segment markedly short, about one-fifth as long as the first segment. Thus, we transferred it to the subgenus *Onthophagiellus*.

Acknowledgments

We wish to express our cordial thanks to Mr. K. Sugino and Dr. K. Okubo for their kindly giving us invaluable specimens. This study was supported in part by a Grant-in-Aid from the Japan Society for the Promotion of Science (No. 17405011). Lastly, we would like to express our hearty thanks to Dr. Yves Cambefort, Museum national d'Histoire naturelle, Paris for examining type specimens preserved in the Museum.

要　　約

越智輝雄・近　雅博：東南アジア産コガネムシ科甲虫　(第16報). スマトラ及びマレー半島産エンマコガネ属の3新種.———スマトラからアシナガエンマコガネ亜属.(新称) *Onthophagiellus* の2新種 *O.* (*O.*) *tridentitibialis* sp. nov., *O.* (*O.*) *sumatramontanus* sp. nov., 及びマレー半島から1新種 *O.* (*O.*) *suginokoichii* sp. nov. を記載した。併せて，これまで *Indachorius* 亜属の種として位置付けられてきた *O. inermivertex* Boucomont を今回 *Onthophagiellus* 亜属に移した。さらに，タイプシリーズに含めなかったが，*O.* (*O.*) *tridentitibialis* sp. nov. をボルネオから記録した.

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Three New Species of the Genus *Ochicanthon* from Java and Borneo (Coleoptera: Scarabaeidae)

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Abstract Three new species of the genus *Ochicanthon* are described under the names of *Ochicanthon oharai* sp. nov. from Java, *O. takakui* sp. nov. from Java and *O. uedai* sp. nov. from Borneo.

The genus *Ochicanthon* Vaz-de-MELLO (Scarabaeidae, Canthonini), formerly named as *Phacosoma* BOUCOMONT (Vaz-de-MELLO, 2003), has been recorded from various localities of South and Southeast Asia (ARROW, 1931; BOUCOMONT, 1914; BALTHASAR, 1963; HAMBOONSONG and MASUMOTO, 2001; MASUMOTO, 1989; OCHI, 1990; OCHI and ARAYA, 1996; OCHI *et al.*, 1997, 2006, 2007; PAULIAN, 1980, 1983, 1987). However, up to the present, this genus has not been recorded from Java.

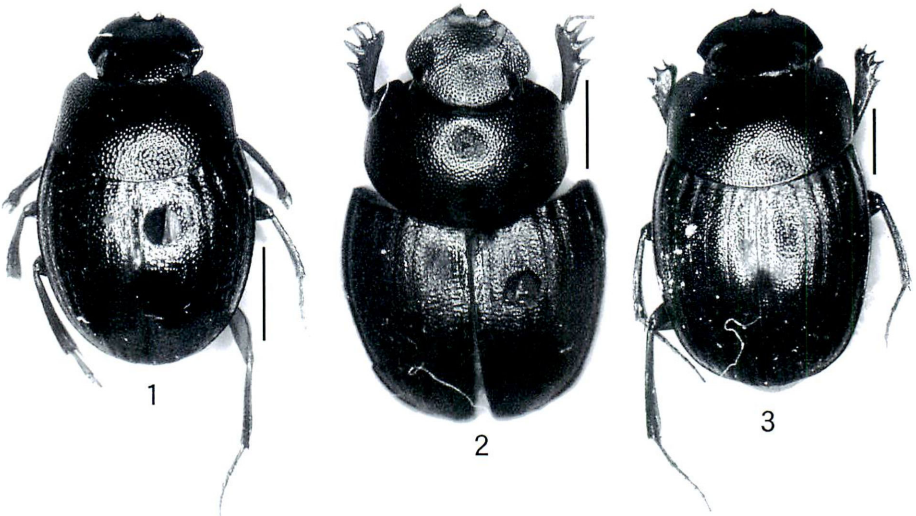
When we examined a series of dung beetle specimens collected from Java by the last author, we found specimens of two *Ochicanthon* species in the collection. After close examinations and comparisons, we concluded that both two species are new to science, and describe them in this paper. In addition, we describe a new species of *Ochicanthon* from E. Kalimantan based on the specimens collected by Dr. A. Ueda in the course of his ecological researches. All the holotypes are deposited in the collection of the Zoology Division, Research Center for Biology, LIPI, Bogor, Indonesia.

Ochicanthon oharai sp. nov.

(Figs. 1, 4–14)

Length: 3.7–4.0 mm; width: 2.4–2.5 mm (n=3).

Body small-sized, oval, weakly convex; dorsal side weakly shining, rather sparsely clothed with very minute inconspicuous recumbent yellowish hairs except for the almost glabrous head;



Figs. 1–3. Habitus of *Ochicanthon* spp.,—— 1, *O. oharai* sp. nov., holotype, male; 2, *O. takakui* sp. nov., holotype, female; 3, *O. uedai* sp. nov., holotype, male. Scale 1 mm.

ventral side shining, almost glabrous except for the abdomen and pygidium which are sparsely clothed with similar hairs as those on dorsum. Color blackish brown, with legs, epipleurae, abdomen with 6th sternite and pygidium bright reddish brown; the anterior portion of head, mouth parts and palpi reddish brown; antennae with antennal foot-stalks pale reddish brown, club-segments dark reddish brown.

Male. Head distinctly transverse; clypeus not strongly produced forward, deeply and fairly broadly notched in the middle, the notch clearly U-shaped in outline, with a reflexed and sharp tooth on either side of the notch; clypeal margin except for the median two teeth clearly rounded on either side; clypeo-frontal suture completely effaced; clypeo-genal sutures fine but clearly defined; genae rather wide, well produced laterad, with genal angles obtusely angulate at the middle, rounded at tip; surface shining, fairly densely covered with strong small punctures, which are confluent partly, especially on vertex, and becoming finer towards apex. Eyes not so large, the interspace between them about 4.0 times as wide as the width of an eye (n=1).

Pronotum weakly convex, about 1.9 times as wide as long (n=1); anterior margin emarginated, finely bordered; lateral margins obtusely angulate in the apical fourth, further almost straightly diverging towards posterior angles, with fine marginal line; basal margin widely rounded, with marginal line not obviously bordered; anterior angles well produced forward, obtusely angulate; posterior angles distinct and obtuse; disc with a very short weak longitudinal carina along each lateral margin, which is not distinctly forked at apex; surface shining, densely covered with strong annular punctures, the punctures becoming clearly finer and sparser in the median narrow portion; each puncture with a fine recumbent inconspicuous hair.

Elytra about 1.2 times as wide as long (n=1); striae distinctly and shallowly impressed, of which 7th stria is clearly wide and a little deep; strial punctures weak, slightly notching both interval margins; intervals with 1st to 4th almost flat, and 5th to 7th slightly convex, shining, somewhat densely covered with fairly small asperate punctures, which are much smaller than those on pronotum; each puncture with a fine recumbent inconspicuous hair.

Pygidium strongly convex near apex, shining, closely covered with round ocellate punctures. Metasternum a little convex, with median portion shining, sparsely and finely punctate at post-median portion, rather densely and a little coarsely on marginal portions; lateral portions densely punctate. Abdomen opaque to weakly shining: 1st to 4th sternites micro-strigose apicad, with one or two transverse rows of annular punctures basally, 5th and 6th almost or wholly covered with similar punctures. Pro- and metafemora with simple inner edge. Protibiae slightly incurved, expanded anteriorly, with three acute outer teeth, and distinctly denticulate among them and on the remaining external margin; inner distal end of protibia well produced forward and a little swollen. Mesotibiae rather stout and slightly curved, 0.75 mm in length (n=1) 0.16 mm in apical width (n=1); mesotarsi slender, 0.75 mm in total length (n=1), with basal segment elongate, 0.25 mm in length (n=1), 0.08 mm in width, and about 3.0 times as long as wide (n=1). Metatibiae slender, almost straight, 0.80 mm in length (n=1); metatarsi 0.8 mm in length (n=1), with basal segment 0.3 mm in length, 0.08 mm in width, and about 3.8 times as long as wide (n=1).

Aedeagus large; phallobase about 0.9 mm in length (n=1). Parameres robust, fairly asymmetrical from dorsal, ventral and lateral views; the right paramere about 0.7 mm in length (n=1), deeply and widely cut off on dorsal median portion, with apex produced as an upturned rounded lobe from lateral view; the left paramere also about 0.7 mm in length (n=1), complicatedly and narrowly cut off dorsally, with apex straightly produced posteriad as a slight rounded lobe; ventral membrane narrow, with a sharply sub-triangular tooth from ventral view.

Female. Head with clypeal margin more strongly curved on either side of the median two teeth which are more sharply produced forward; surface more densely and a little strongly punctate than in male. Protibiae stouter, with four stronger external teeth. Mesotibiae a little stout and slightly curved, 0.80 mm in length (n=1), 0.22 mm in apical width (n=1); mesotarsi slender, with basal segment elongate, 0.25 mm in length (n=1), 0.08 mm in width, and about 3.0 times as long as wide (n=1). Metatibiae slender, almost straight, 1.1 mm in length (n=1); metatarsi with basal segment 0.35 mm in length, 0.08 mm in width, and about 4.4 times as long as wide (n=1).

Type series. Holotype: ♂, Baturaden, 03°00'S, 107°00'E, Purwokerto, Java Is., Indonesia, 29. III. 2006, S. HARTINI leg. Paratypes: 1♂, 1♀, the same data as the holotype.

Distribution. Java, Indonesia.

Etymology. The present species is named in honor of Dr. Masahiro OHARA, the Hokkaido University Museum, who gave us the opportunity of the present study.

Notes. The present new species is somewhat related to *O. gangkui* OCHI, KON et KIKUTA from Sabah, Borneo, but can easily be distinguished from the latter by the following characters: 1) eyes are clearly smaller, and the interspace between them is about 5.0 to 6.0 times as wide as an eye, whereas in *O. gangkui*, it is distinctly larger, and the interspace between them is about 4.0 to 4.4 times as wide as an eye; 2) gena is relatively broader, whereas in *O. gangkui*, it is clearly narrower; 3) pronotum is more closely, a little coarsely and partly confluently punctate, whereas in *O. gangkui*, the pronotum is more sparsely, neither coarsely nor confluently punctate; 4) in male, genitalia with parameres are clearly larger and fairly differently shaped.

Ochicanthon takakui sp. nov.

(Figs. 2, 15–22)

Length: 4.8 mm; width: 2.8 mm (n=1).

Female. Body small-sized, oval, well convex above; dorsal side slightly shining, a little sparsely clothed with very minute inconspicuous recumbent yellowish hairs except for the almost glabrous head; ventral side shining, almost glabrous except for the abdomen and pygidium which are sparsely clothed with similar hairs as those on dorsum. Color blackish brown, with legs and anterior portion of head a little reddish; mouth parts and palpi reddish brown; antennae with antennal foot-stalks pale reddish brown, club segments dark reddish brown.

Head transverse, a little strongly produced forward than in the proceeding species; clypeus well produced forward, deeply and fairly broadly notched in the middle, the notch clearly U-shaped in outline, with a well upturned and sharp tooth on either side of the notch; clypeal margin except for the median two teeth gently rounded on either side; clypeo-frontal suture completely effaced; clypeo-genal sutures fine but clearly defined; genae somewhat wide, well produced laterad, with genal angles obtusely angulate at the middle, rounded at tip; surface weakly shining, a little densely covered with small punctures, which are confluent partly and becoming finer towards apex; the punctures a little but clearly smaller and less close than *O. oharai*. Eyes not so large, the interspace between them about 4.5 times as wide as the width of an eye (n=1).

Pronotum evenly and a little strongly convex than in the proceeding species, about 1.8 times as wide as long (n=1); anterior margin emarginated, finely bordered; lateral margins strongly rounded in the apical third, further almost straightly diverging towards posterior angles, with fine marginal line; basal margin widely rounded, with marginal line not clearly bordered; anterior angles a little produced forward, more obtusely angulate than in *O. oharai*; posterior angles distinct and obtuse; disc with a very short weak longitudinal carina along each lateral margin, which is not distinctly forked at apex; surface weakly shining, densely covered with strong annular punctures, the punctures becoming clearly finer and sparser in the antero-median narrow portion; each puncture with a fine recumbent inconspicuous hair.

Elytra about 1.4 times as wide as long (n=1); striae distinctly and a little widely impressed; strial punctures weak, slightly notching both interval margins; intervals with 1st to 4th almost flat, and 5th to 7th slightly convex; surface weakly shining, distinctly wrinkled, with 1st to 3rd intervals somewhat sparsely covered with small asperate punctures, the punctures of the 4th to 7th becoming denser and coarser, and also the wrinkles becoming stronger; each puncture with a fine recumbent inconspicuous hair. Hind wings short, about 1.5 mm in length, distinctly reduced and flightless.

Pygidium strongly convex near apex, shining, closely covered with round to transverse, ocellate punctures. Metasternum not so strongly convex, with post-median portion shining, sparsely and finely punctate at the middle, rather densely and a little coarsely on marginal portions; lateral portions densely punctate. Abdomen with 1st to 4th sternites micro-strigose apicad, with one or two transverse rows of annular punctures basally, 5th and 6th shining, almost or

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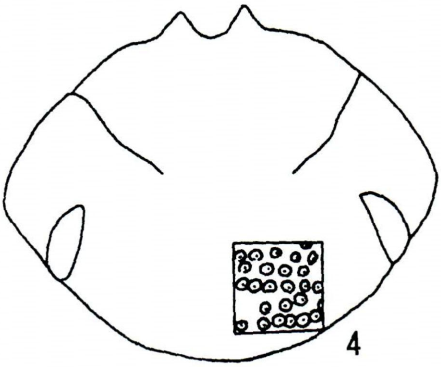
Figs. 4–14. *Ochicanthon oharai* sp. nov.—— 4, head, male, dorsal view; 5, right protibia, male, dorsal view; 6, right mesotibia, male, dorsal view; 7, right metatibia, male, dorsal view; 8, aedeagus, left lateral view; 9, parameres, right lateral view; 10, parameres, dorsal view; 11, parameres, ventral view; 12, right protibia, female, dorsal view; 13, right mesotibia, female, dorsal view; 14, right metatibia, female, dorsal view. Scale 1 mm.



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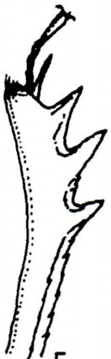

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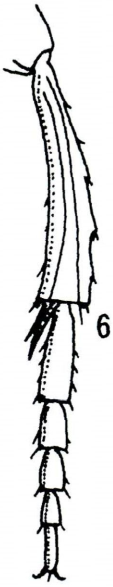

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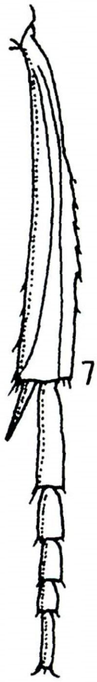

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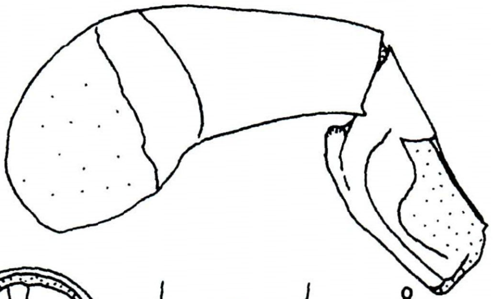

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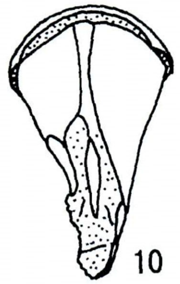

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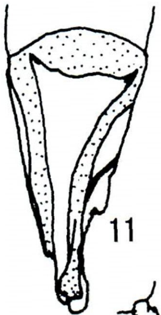

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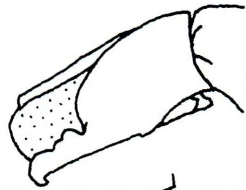

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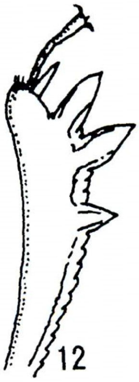

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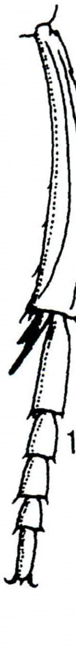

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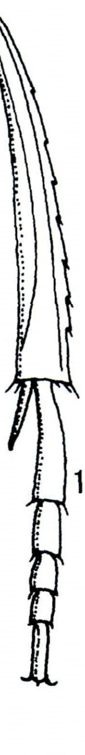

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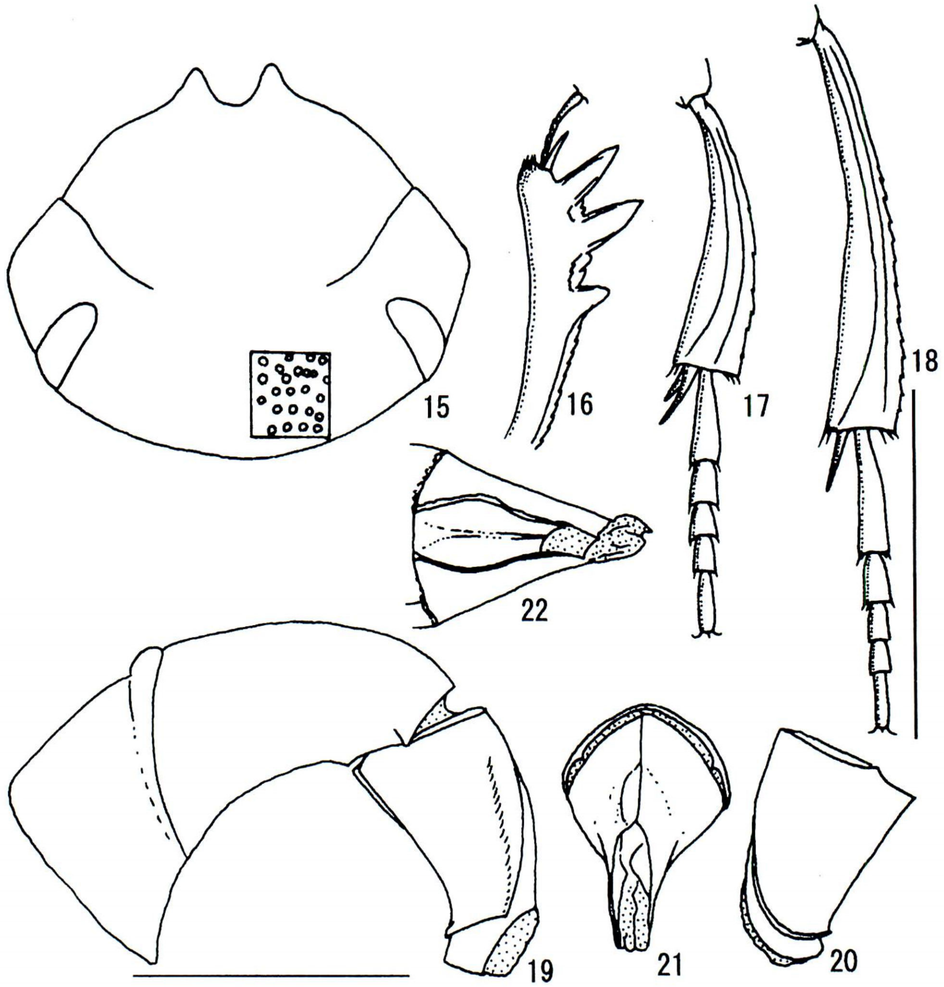

Figs. 15–18. *Ochicanthon takakui* sp. nov.—— 15, head, female, dorsal view; 16, right protibia, female, dorsal view; 17, right mesotibia, female, dorsal view; 18, right metatibia, female, dorsal view. Figs. 19–22. *O. uedai* sp. nov.——19, aedeagus, left lateral view; 20, parameres, right lateral view; 21, parameres, dorsal view; 22, parameres, ventral view. Scale 1 mm.

wholly covered with similar punctures. Pro- and metafemora with simple inner edge. Protibiae slightly incurved, rather broad, expanded anteriorly, with three acute external teeth, and distinctly denticulate among them and on the remaining external margin; inner distal end of protibia well produced forward and a little swollen. Mesotibiae remarkably stout than in the congeners, and slightly curved, 0.80 mm in length (n=1), 0.22 mm in apical width (n=1); mesotarsi slender, 0.90 mm in total length (n=1), with basal segment elongate, 0.25 mm in length (n=1), 0.08 mm in width, and about 3.0 times as long as wide (n=1). Metatibiae slender, though a little broad, almost straight, 1.2 mm in length (n=1); metatarsi 0.93 mm in total length (n=1), with basal segment 0.35 mm in length, 0.08 mm in width, and about 4.4 times as long as wide (n=1).

Type series. Holotype: ♀, Gnun Ciremai, Java, Indonesia, 12. IV. 2006, C. CHOLIK leg.

Distribution. Java, Indonesia.

Etymology. The present species is named in honor of Dr. Gen TAKAKU, Hokkaido University of Education, who has been one of indispensable collaborators of the last author.

Notes. The present new species is somewhat related to *O. parantisae* OCHI, KON et KIKUTA from Sabah, Borneo, but can easily be distinguished from the latter by the following characters: 1) hind wings are short, clearly reduced and flightless, whereas in *O. parantisae*, the hind wings are ordinary; 2) mesotibiae are remarkably short and stout, fairly broad at apex, whereas in *O. parantisae*, the mesotibia is not remarkably short and stout, not fairly broad at apex; 3) metatibiae are also a little stouter than in the congeners; 4) eyes are clearly smaller, and the interspace between them is about 4.5 times as wide as the width of an eye, whereas in *O. parantisae*, these are larger, and the interspace between them is about 3.1 to 3.3 times as wide as the width of an eye; 5) metasternum is rather depressed, not distinctly convex.

Ochicanthon uedai sp. nov.

(Figs. 3, 19–22)

Length: 5.0–6.1 mm; width: 2.9–3.5 mm (n=4).

Body somewhat small-sized, oval, rather depressed; dorsal side a little shining, sparsely clothed with very minute inconspicuous recumbent yellowish hairs except for the almost glabrous head; ventral side also shining, almost glabrous except for the abdomen and pygidium which are sparsely clothed with minute inconspicuous recumbent yellowish hairs. Color uniformly blackish brown on the dorsal and ventral surface, with anterior portion of head, legs, sides of abdominal sternites and pygidium more or less reddish brown; mouth parts and palpi also reddish brown; antennae with antennal foot-stalks pale reddish brown, club-segments dirty yellowish brown.

Male. Head fairly transverse, sub-pentagonal in outline; clypeus not so strongly produced forward, deeply and fairly broadly notched in the middle, the notch widely and a little shallowly opened, with a reflexed and sharp tooth on either side of the notch; clypeal margin except for the median two teeth gently rounded on either side; clypeo-frontal suture completely effaced; clypeo-genal sutures fine but clearly defined; genae strongly produced laterad, clearly wide, almost straight in front and slightly sinuate behind, with each genal angle very distinctly angulate at the middle, clearly narrower than a right angle; surface shining, fairly densely covered with strong and a little coarse punctures, which are partly confluent, and becoming finer or impunctate towards apex. Eyes distinctly large, well convex dorsally, the interspace between them about 3.6 to 3.7 times as wide as the width of an eye (n=3).

Pronotum weakly convex, about 1.6 to 1.7 times as wide as long (n=2); anterior margin weakly bi-sinuate, finely bordered; lateral margins obtusely angulate in the apical fourth, further almost straightly diverging towards posterior angles, with fine marginal line; basal margin widely rounded, with marginal line not distinctly bordered; anterior angles well produced forward, obtusely angulate; posterior angles distinct and obtuse; disc with a short weak longitudinal carina along each lateral margin, extending from base to near pronotal half length, though not clearly forked at apex; surface shining, densely covered with strong annular setiferous punctures except for impunctate median longitudinal narrow portion along midline, the punctures becoming denser and larger towards base and sides.

Elytra about 1.1 times as wide as long (n=2); striae a little strongly and a little widely impressed, of which 6th and 7th striae are rather deep; strial punctures a little close, strong and distinctly notching both interval margins; intervals with 1st to 3rd almost flat, and 5th to 7th slightly convex, shining and weakly wrinkled, a little densely covered with small asperate setiferous punctures, which are much smaller than those on pronotum, the punctures becoming a little larger and more asperate towards outer intervals.

Pygidium strongly convex near apex, and obtusely keeled along midline in apical half, shining, closely covered with round to transverse ocellate punctures. Metasternum well convex, shining, with post median portion along midline and anterior portion sparsely and finely punctate, the remaining portions rather densely and a little coarsely covered with small strong punctures; lateral portions densely punctate. Abdomen with 1st to 4th sternites sub-opaque, microstrigose apicad, with one or two transverse rows of annular punctures basally, 5th and 6th shining, almost or wholly covered with similar punctures. Pro- and metafemora with simple inner edge. Protibiae slightly incurved near apex, expanded anteriorly, with three acute outer teeth, and distinctly denticulate among them and on the remaining external margin; inner distal end of protibia well produced forward, a little swollen and decurved. Mesotibiae rather stout and slightly curved, about 1.2 mm in length (n=1); mesotarsi slender, about 1.3 mm in total length (n=1), with basal segment elongate, 0.41 mm in length (n=1), 0.12 mm in width, and about 3.4 times as long as wide (n=1). Metatibiae slender, almost straight and simply formed, about 1.6 mm in length (n=1); metatarsi slender, 1.3 mm in total length (n=1), with basal segment 0.5 mm in length, 0.13 mm in width, and about 3.8 times as long as wide (n=1).

Aedeagus fairly large; phallobase about 1.7 mm in length (n=1). Parameres clearly large, a little symmetrical from dorsal view; the right paramere about 0.8 mm in length (n=1), almost simply formed in lateral view; the left paramere about 0.7 mm in length (n=1), slightly shorter than the right one, and also simply formed in lateral view; both apices subparallel-sided from dorsal view; ventral membrane very narrow, almost distinctly screlotized.

Female. The female specimen examined is of the smaller individual. Punctures on head a little larger and slightly less close; clypeo-genal sutures also not carinate, extending to a little before eyes and terminated as a small smooth transverse impunctate area on either side. Mesotibiae stouter and slightly curved, 1.1 mm in length (n=1), 0.22 mm in apical width (n=1); mesotarsi slender, with basal segment elongate, 0.30 mm in length (n=1), 0.12 mm in width, and about 2.5 times as long as wide (n=1). Metatibiae slender, almost straight, 1.4 mm in length (n=1); metatarsi with basal segment 0.42 mm in length, 0.12 mm in width, and about 3.5 times as long as wide (n=1).

Type series. Holotype: ♂, Sungai Wain, near Balikpapan, E. Kalimantan, Indonesia, 20. XII. 2006, A. UEDA leg. Paratypes: 2♂♂,1♀, the same data as the holotype.

Distribution. kalimantan, Indonesia.

Etymology. The present species is named in honor of Dr. Akira UEDA, Hokkaido Research Center, Forestry and Forest Products Research Institute, who is one of our collaborators in studies on Bornean dung beetles.

Notes. The present new species is somewhat related to *O. parantisae* OCHI, KON et KIKUTA from Sabah, Borneo, but can easily be distinguished from the latter by the following characters: 1) body is clearly larger; 2) gena is a little more strongly produced laterad, with genal angle more distinctly angulate at apex, whereas in *O. parantisae*, it is less strongly produced laterad, with genal angle rounded at apex; 3) head is more clearly transverse; 4) eyes are a little larger, well convex dorsally, the interspace between them about 3.6 to 3.7 times as wide as the width of an eye, whereas in *O. parantisae*, they are slightly smaller, the interspace between them about 4.1 to 4.4 times as wide as the width of an eye.

Acknowledgments

We wish to express our cordial thanks to Masahiro OHARA for giving us the opportunity of the present study. Thanks are also due to Akira UEDA for providing invaluable specimens from E. Kalimantan.

This study is supported in part by a Grant-in-Aid from the Japan Society for the Promotion of Science (No. 17405011).

要　　約

越智輝雄・近　雅博・Shri HARTINI：ジャワ及びボルネオ産 *Ochicanthon* 属の3新種.——— ジャワから *Ochicanthon* 属の2新種 *O. oharai* sp. nov. 及び *O. takakui* sp. nov. とボルネオから1新種 *O. uedai* sp. nov. を記載した．ジャワ産の *O. takakui* sp. nov. は後翅が小さく退化しているため，飛翔が不可能であり地上歩行性であると考えられる．

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Four New Species of the genus *Copris* (Coleoptera: Scarabaeidae) from Cambodia and Myanmar

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Abstract Four new species of *Copris* are described under the names of *C.* (*Copris*) *cambodiensis* sp. nov. from Cambodia, and *C.* (*C.*) *kachinensis* sp. nov., *C.* (*C.*) *tsukamotoi* sp. nov. *C.* (*C.*) *parapecualius* sp. nov. from Myanmar.

We found four undescribed species of the genus *Copris* (Coleoptera, Scarabaeidae), one from Cambodia and three from Myanmar, in Mr. Keiichi TSUKAMOTO's and our private collections, and describe them in this paper.

All the holotypes are deposited in the collection of the Department of Zoology, National Science Museum (Natural History), Tokyo.

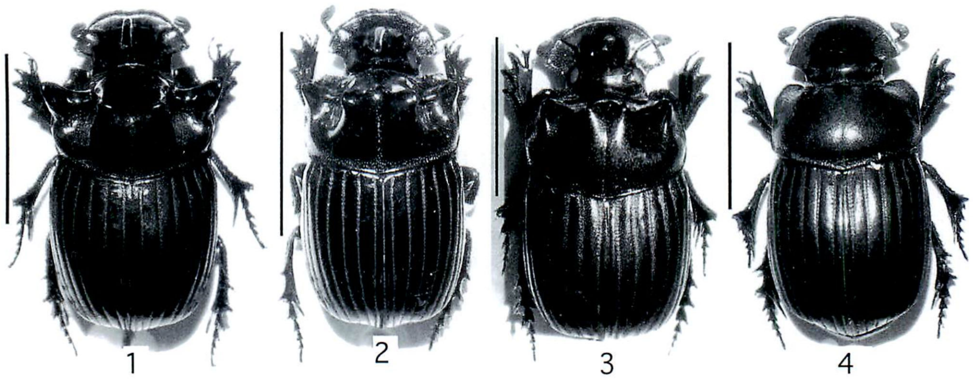
Copris (*Copris*) *cambodiensis* sp. nov.

(Figs. 1, 5–8)

Length: 17.0–18.1 mm; width: 9.0–9.6 mm (n=11).

Body moderate-sized, oval, fairly strongly convex above; dorsal side shining and fairly smooth, entirely glabrous; ventral side shining, partly clothed with reddish hairs. Colour uniformly black; mouth organs, palpi, antennae, and legs reddish brown.

Male. Head very strongly transverse, fairly widely semicircular in outline; clypeal margin rather shallowly and widely incised at the middle and slightly reflexed, not distinctly lobed on either side of the incision, the remaining margin distinctly bordered and a little reflexed; the incision usually more or less asymmetrical under high magnification (×20); genae strongly produced laterad as a sharp angle which is clearly narrower than a right angle, marginal border



Figs. 1–4. Habitus of *Copris* (*Copris*) spp., scale 1 cm. ——1, *C.* (*C.*) *cambodiensis* sp. nov., holotype, male; 2, *C.* (*C.*) *kachinensis* sp. nov., holotype, male; 3, *C.* (*C.*) *tsukamotoi* sp. nov., holotype, male; 4, *C.* (*C.*) *parapecuarius* sp. nov., holotype, male.

broader in front and narrower behind; cephalic horn located in the middle a little before the level of eyes, slender, evenly curved backward, about 5.0 mm in length in large individuals, subquadrate in cross-section, with a pair of strong teeth at base which are 0.5 mm in length; surface shining and smooth, sparsely and finely punctate, the punctures becoming denser and larger on lateral half of genae and vertex between eyes; in smaller males, the cephalic horn reduced to a short pointed process on frons.

Pronotum fairly strongly convex, about 1.4 to 1.5 times as wide as long (n=3), with a fine median longitudinal groove along midline, though interrupted at the middle; anterior margin strongly bi-sinuate, remarkably bordered on either sinuation, finely so in the middle, with marginal membrane becoming broad on either sinuation; lateral margins finely bordered, gently rounded in the middle, briefly and distinctly sinuate near anterior angles; anterior angles well produced forward, sub-quadrate; posterior angles obtuse; base with a fine transverse groove along basal margin; basal margin obtusely angulate at the middle, clearly bordered throughout; disc steeply declivous in front at the middle, broadly and deeply excavated on either side; the summit of the declivity produced upward into two strong but not so sharp prominences on either side whose interspace is about 2.0 to 2.5 mm in length; the outer portion of either excavation very strongly produced upward as a sharp and large prominence; surface shining and rather smooth, sparsely to rather closely covered with large and shallow punctures on the marginal portions, lateral excavations and median longitudinal groove, the remaining portions smooth and almost impunctate.

Elytra strongly convex, about 1.0 to 1.1 times as wide as long (n=3), with 10 striae on each elytron, 9th and 10th almost confluent in basal half, 8th incomplete, interrupted or missing near apex, 1st and 10th, 2nd and 9th, 3rd and 8th, 4th and 5th distinctly joined at apex, 6th and 7th not distinctly joined at apex; all the striae strongly and deeply grooved; strial punctures strong, clearly notching both interval margins; intervals weakly convex, shining and smooth, sparsely and finely punctate.

Pygidium transverse, well convex, shining, irregularly densely covered with strong punctures except for median impunctate smooth area along median line in basal half. Prothorax with anterior angles ordinary, not distinctly excavated on the ventral side. Metasternum with a distinct median longitudinal groove along midline throughout and with a small round excavation at the middle near apex; metasternal shield glabrous, shining, smooth, very sparsely and finely punctate; lateral portion a little closely covered with coarse ocellate punctures. Protibiae broad, with four external teeth; terminal spur strongly spatulate, broadened at apex.

Aedeagus elongate, about 4.2–4.5 mm (n=2) in total length. Phallobase about 2.7–2.9 mm (n=2) in length in lateral view, about 1.0 mm (n=2) in apical width in dorsal view. Parameres rather broad from dorsal view, slender, about 1.5–1.6 mm (n=2) in length in lateral view; both dorsal lobes distinct, a little raised upward, with apices right-angularly incurved and then forming a slightly broad lobe inward in dorsal view, the lobe obliquely or vertically flattened; dorsal membranes small, sub-hexagonal; ventral side with membranes well developed, which are occupying almost whole surface except for marginal screlotized portions.

Female. Head with a strongly elevated transverse lamina which is located at the middle of clypeus a little before the level of eyes, about 1.3 to 1.6 mm in width (n=3) and about 0.5 to 0.6 mm in length (n=3) from dorsal aspect, about 2.0 to 2.1 mm in height (n=3) from anterior aspect, with the summit slightly emarginated at the middle; clypeal margin more distinctly notched at the middle, with more strongly lobed on either side. Pronotum less strongly convex than in male, with a deeper and a little wider median longitudinal groove along midline throughout; disc rather steeply declivous in front a little behind anterior margin, whose upper edge forms two pairs of transversely arranged obtuse tubercles; the medial two tubercles transversely sub-carinate and close together, the lateral two tubercles small, a little separated by a slight shallow groove on either side; surface similarly punctuate as in male, though a little stronger especially on the median longitudinal groove and so on. Protibiae with terminal spur slenderer and less strongly spatulate at apex.

Type series. Holotype: ♂, Phumi Kalai Thum, Cambodia, 1. VII. 2007. Paratypes: 7♂♂, 3♀♀, the same data as the holotype.

Distribution. Cambodia.

Etymology. The specific name is taken after the locality, Cambodia.

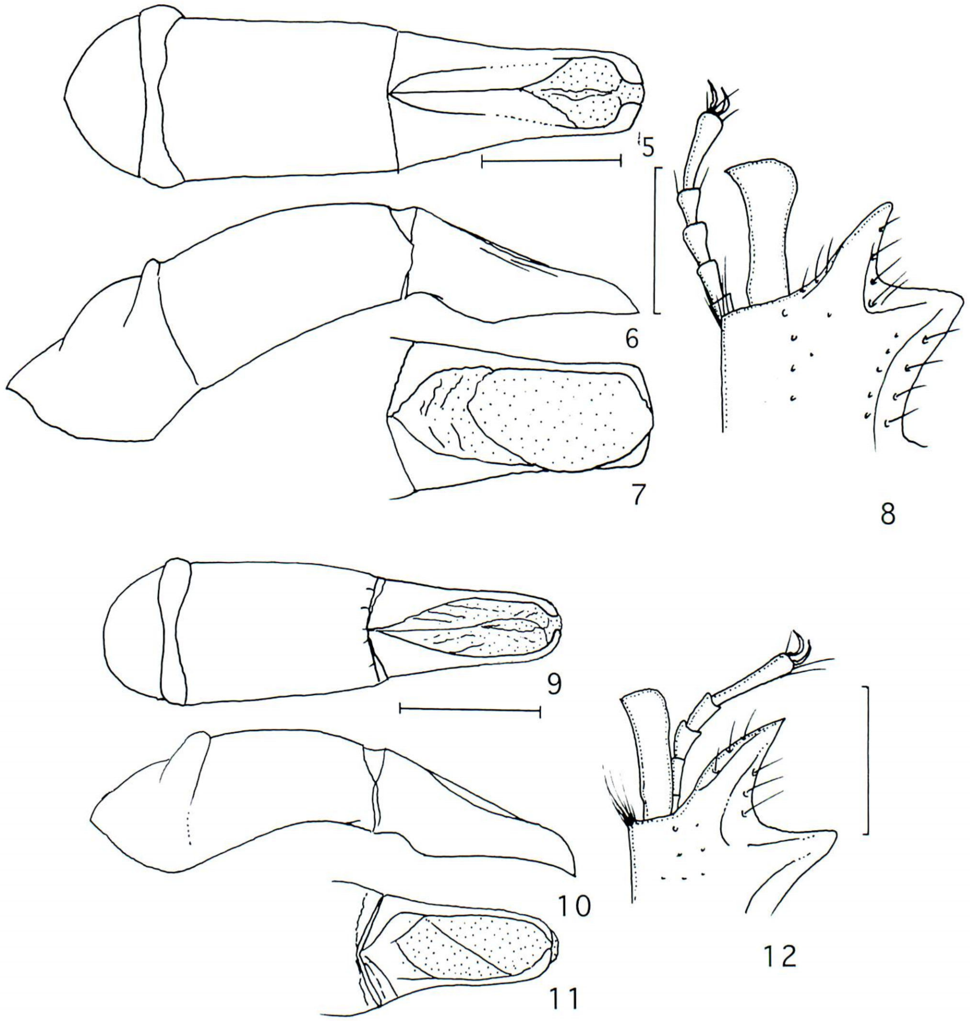
Notes. The present new species is somewhat similar to *Copris* (*Copris*) *klapperichi* BALTHASAR from China, but can be distinguished from the latter by the following characteristics: 1) body is clearly larger; 2) 8th stria of elytron is incomplete, interrupted or missing in basal third, whereas in *C. klapperichi*, it is complete, neither interrupted nor missing in basal third; 3) head is very transverse, whereas in *C. klapperichi*, it is clearly narrower; 4) in male, the prothoracic four prominences are well developed with the median two ones somewhat close, whereas in *C. klapperichi*, the prothoracic four prominences are less developed with the median two ones well separated to each other.

***Copris* (*Copris*) *kachinensis* sp. nov.**

(Figs. 2, 9–12)

Length: 12.1–17.3 mm; width: 6.3–8.6 mm (n=26).

Body rather small-sized, broadly oval, fairly strongly convex above; dorsal side strongly shining and smooth, entirely glabrous; ventral side also shining, partly clothed with reddish hairs. Colour uniformly pitchy black; mouth organs, palpi, antennae, and legs reddish brown.



Figs. 5–12. Copris spp.——5–8, *C.* (*C.*) *cambodiensis* sp. nov. 5, aedeagus, dorsal view; 6, ditto, lateral view; 7, parameres, ventral view; 8, anterior portion of right protibia, dorsal view, male; 9–12, *C.* (*C.*) *kachinensis* sp. nov., all scale 1 mm. 9, aedeagus, dorsal view; 10, ditto, lateral view; 11, parameres, ventral view; 12, terminal spur of right protibia, dorsal view, male., All scale 1 mm.

Male. Head strongly transverse, widely semicircular in outline; clypeal margin shallowly and widely incised at the middle and well reflexed, weakly lobed on either side of the incision, the remaining margin distinctly bordered and reflexed; genae strongly produced laterad as a rather sharp angle which is slightly narrower than a right angle, marginal border broader in front and narrower behind; cephalic horn located in the middle a little before the level of eyes, slender, evenly curved backward, about 4.5 mm in length in large individuals, sub-quadrate in cross-section, with a pair of distinct teeth a little before base; surface shining, somewhat evenly and a little closely covered with strong punctures on clypeus and genae, smooth and almost impunctate on marginal portion of the horn and also frons to vertex; in smaller males, the cephalic horn reduced to a short pointed process on frons.

Pronotum fairly strongly convex, about 1.5 to 1.6 times as wide as long (n=3), with a fine median longitudinal groove along midline in basal three-fourths; anterior margin strongly bi-sinuate, remarkably bordered on either sinuation, fine in the middle, with marginal membrane becoming very broad on either sinuation; lateral margins finely bordered, weakly sinuate or almost staright in the middle, obliquely straight in front and gently rounded behind; anterior angles truncated with very fine marginal border; posterior angles obtuse; base with a fine transverse groove along basal margin; basal margin obtusely angulate at the middle, clearly bordered throughout; disc steeply declivous in front at the middle, fairly broadly and deeply excavated on either side of the median declivity; the summit of the median declivity produced upward into four sharp prominences, the median two ones close and the interspace about 0.7 mm in length in large individuals, the outer two ones slightly larger and a little separated by the median one respectively on either side; the outer portion of either excavation strongly produced upward as a sharp and large prominence; surface shining and smooth, densely and coarsely punctate on the lateral and basal portions along margins, median longitudinal groove, the remaining portions smooth and almost impunctate or puncticulate.

Elytra strongly convex, about 1.1 times as wide as long (n=3), with 10 striae on each elytron, 9th and 10th almost confluent in basal half, 8th usually complete or frequently very briefly interrupted near apex, 1st and 10th, 2nd and 9th, 3rd and 8th, 4th and 5th, 6th and 7th mostly joined at apex, though frequently 3rd, 4th, 5th and 8th joined near apex; all the striae strongly grooved, a little micro-sculptured in the groove; strial punctures distinct, each with a small, round and shining granule in the middle, clearly notching both interval margins; intervals weakly but clearly convex, shining and smooth, sparsely and very finely punctate.

Pygidium transverse, gently convex, shining, a little densely covered with strong, round to transverse punctures. Metasternum with a distinct median longitudinal groove along midline throughout, and with a small transverse groove near apex; metasternal shield almost glabrous, shining, sparsely and very finely punctate in the middle, coarsely punctate in front and at base; lateral portions scattered with setiferous large annular punctures. Protibiae broad, with four external teeth; terminal spur rather broad and spatulate at apex.

Aedeagus a little elongate, about 4.1–4.5 mm (n=2) in total length. Phallobase about 3.5–3.6 mm (n=2) in length from lateral view, about 0.8 mm (n=2) in apical width from dorsal view. Parameres broad in dorsal view, about 1.2–1.3 mm (n=2) in length from lateral view; both dorsal lobes distinct, with apices clearly incurved in dorsal view; dorsal membranes broad and elongate; ventral side with membranes broadly developed, which are occupying almost whole surface except for marginal screlotized portions.

Female. Head with a strongly elevated transverse lamina at the middle just on the clypeo-frontal suture, which is about 0.7 mm in height and clearly emarginated at the summit; surface a little more strongly wrinkled on apical half of clypeus, almost the same as in male on the remaining portions. Pronotum less convex dorsally than in male, briefly declivous in front, and forming a transverse and almost straight carina on the upper edge of the declivity; anterior margin broadly and almost evenly bordered; disc with a median longitudinal groove along midline in basal four-fifths; surface more strongly punctate than in male, especially denser and larger on lateral portions and behind the transverse carina. Protibia a little broader, with terminal spur rather broad as well as in male, though less spatulate at apex.

Type series. Holotype: ♂, Chudo Rozi, N. E. Kachin, Myanmar, VIII. 2005. Paratypes: 12♂♂13♀♀, the same data as the holotype.

Distribution. Myanmar.

Etymology. The species is named after the place, Kachin, a district of Myanmar.

Notes. The present new species is somewhat related to *Copris* (*Copris*) *carinicus* GILLET from Myanmar, but can be distinguished from the latter by the following characteristics: 1) body is a little smaller, more elongated in outline, and more strongly shining and more smooth on the dorsal side; 2) intervals of elytron are covered with sparse and very fine punctures, whereas in *C. carinicus*, they are covered with sparse, rather small but distinct punctures; 3) head is less closely and less strongly punctate instead of being fairly closely and strongly punctate; 4) in male, terminal spur of protibia is rather broad and spatulate at apex, whereas in *C. carinicus*, it is slenderer and a little incurved near apex; 5) in male, prothoracic prominences are distinctly well developed, especially median four tubercles sharp and more pointed.

***Copris* (*Copris*) *tsukamotoi* sp. nov.**

(Figs. 3, 13–16)

Length: 17.6–20.3 mm; width: 9.2–10.4 mm (n=8).

Body moderate-sized, oval, strongly convex above; dorsal side weakly shining, entirely glabrous at a glance, in reality very sparse and extremely minute hairs perceptible on pronotum and elytra under high magnification (×40); ventral side also weakly shining, partly clothed with reddish hairs; mesosternum rather sparsely clothed with recumbent long yellowish hairs; metasternum somewhat sparsely clothed with long erect yellowish hairs on lateral portions. Colour uniformly black; mouth organs, palpi, antennae, and legs reddish brown.

Male. Head a little transverse, semicircular in outline; clypeal margin very shallowly and widely incised at the middle, with either side of the incision slightly lobed and reflexed, the remaining margin broadly bordered and a little reflexed; genae strongly produced laterad, with genal corner slightly narrower than a right angle, margin slightly sinuate in front and behind, marginal border broad in front and narrow behind; cephalic horn located at the middle of clypeus, slender, about 3.5 mm in length in large individuals, almost vertical and very slightly curved backward, conical in cross-section at base; postero-basal portion simply formed, without a pair of small teeth; surface shining, smooth and almost impunctate on clypeus, finely and sparsely punctate on vertex, sparsely covered with strong punctures on genae, irregularly sculptured or granulate on the posterior face of horn; in smaller males, the cephalic horn reduced to a short and transversely elevated carina between eyes.

Pronotum strongly convex, about 1.7 times as wide as long (n=3), with a median strong longitudinal groove along midline in basal two-thirds; anterior margin strongly bi-sinuate, broadly bordered, remarkably so on both sinuations; lateral margins finely bordered, weakly sinuate at the middle, gently rounded in front and behind; anterior angles well produced forward and sub-angulate, rounded at apices; posterior angles obtuse; base with a fine transverse groove along basal margin; basal margin finely bordered throughout, obtusely angulate at the middle; disc very steeply declivous in front, with the upper edge of the declivity bearing four transversely arranged strong prominences; the inner two prominences tuberculate and a little close to each other in the middle, the outer two prominences sharply produced forward as a sub-triangular plate and clearly separated from the inner one by a rather deep, broad and round excavation on either side; anterior face of the declivity sub-vertical in the middle; surface weakly shining, sparsely and coarsely punctuate except for almost smooth, sparsely and finely punctuate anterior declivity; in smaller males, the prothoracic prominences reduced to a transverse carina in front.

Elytra strongly convex, about 1.1 to 1.2 times as wide as long (n=3), with 10 striae on each elytron, 9th and 10th almost confluent in basal third, 8th incomplete, clearly missing or interrupted near apex, 1st and 10th, 2nd and 9th, 3rd and 8th, 6th and 7th distinctly or barely joined near apex, 4th and 5th not distinctly joined at apex; all the striae fairly strongly and rather broadly grooved, clearly micro-sculptured in the groove; strial punctures distinct, each with a small, round and shining granule in the middle, a little notching both interval margins; intervals weakly but clearly convex, slightly shining, densely and strongly punctate on either side along stria, sparsely to very sparsely in the middle along median line.

Pygidium transverse, well convex, weakly shining, rather sparsely and evenly covered with strong, round to transversely round punctures. Prothorax with anterior angles distinctly excavated on the ventral side. Metasternum with a distinct median longitudinal groove along midline; metasternal shield glabrous, shining, sparsely and very finely punctate; lateral portions shining, scattered with setiferous punctures inward, the punctures becoming asperate to granulate outward. Protibiae broad, with three external teeth; terminal spur elongate, straight and strongly forked into two sharp apices at distal end, with the inner apex slightly longer than the outer one.

Aedeagus robust, about 4.4 mm (n=1) in total length. Phallobase fairly short and stout, about 2.5 mm (n=1) in length from lateral view, about 1.1 mm (n=1) in apical width from dorsal view. Parameres relatively long, a little elongate from dorsal view, about 2.5 mm (n=1) in length from lateral view; from dorsal view, both dorsal lobes rather strong, a little raised upward, with apices strongly incurved; from lateral view, base clearly thin, basal sinus deep; dorsal membranes rather broad; ventral side with membranes fairly broadly developed, which are occupying almost whole surface except for screlotized marginal portions.

Female. Head with a strongly elevated transverse carina on frons, which is curved forward and deeply emarginated at the summit; surface densely and fairly strongly punctate on posterior portion between eyes. Pronotum almost simply formed, less convex dorsally than in male, briefly declivous in front, though not bearing distinct carina or tubercle on the upper edge of the declivity; surface more strongly punctate than in the male, especially denser and larger on lateral portions. Protibiae a little broader, also with the same terminal spur as in the male.

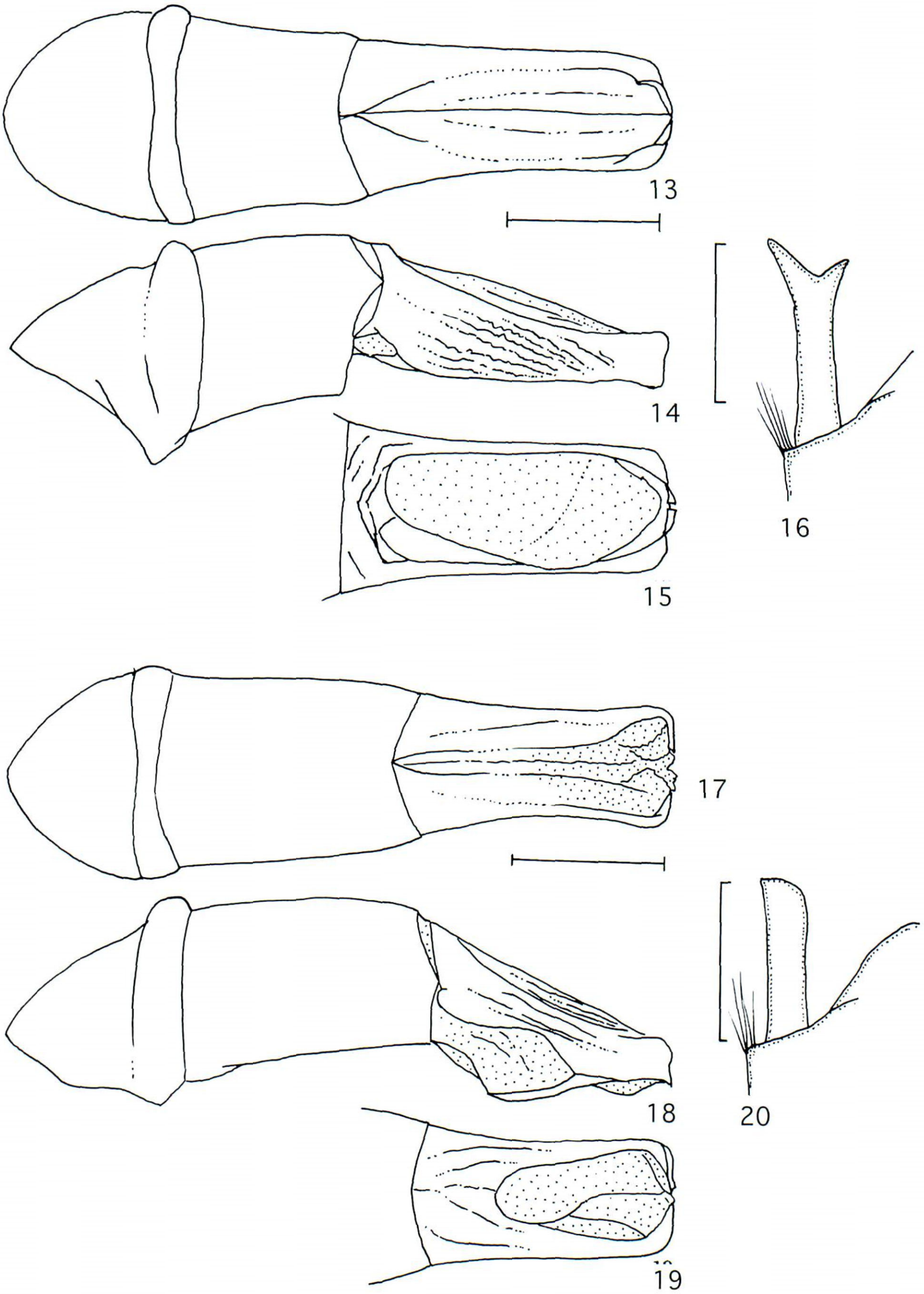
Type series. Holotype: ♂, E. Kachin, Myanmar, V. 2005, K. TSUKAMOTO coll. Paratypes: 2♂♂5♀♀, the same data as the holotype.

Distribution. Myanmar.

Etymology. The specific name is dedicated to Mr. Keiichi TSUKAMOTO, a specialist of dung beetles in Japan.

Notes. The present new species is somewhat related to *Copris* (*Copris*) *kusakabei* OCHI, KON et KAWAHARA from Myanmar, but can be easily distinguished from the latter by the following characters: 1) body is clearly smaller; 2) protibia has a terminal spur which is distinctly forked at apex, whereas in *C. kusakabei*, it has ordinary terminal spur; 3) intervals of elytron are slightly shining, densely and strongly punctuate on either side along stria, sparsely to very sparsely in the middle along median line, whereas in *C. kusakabei*, they are weakly but distinctly micro-rugose, and sparsely and finely punctate; 4) in male genitalia, parameres are a little elongate from dorsal view, whereas in *C. kusakabei*, the parameres are clearly larger and fairly broader in dorsal view.

The present new species is also closely related to *C.* (*C.*) *sabinus* GILLET from Himalayas,



Figs. 13–20. Copris spp.——13–16: *C.* (*C.*) *tsukamotoi* sp. nov., 13, aedeagus, dorsal view; 14, ditto, lateral view ; 15, parameres, ventral view; 16, terminal spur of right protibia, dorsal view, male.——Figs. 17–20, *C.* (*C.*) *parapecuarius* sp. nov., 17, aedeagus, dorsal view; 18, ditto, lateral view; 19, parameres, ventral view; 20, terminal spur of right protibia, dorsal view, male. All scale 1 mm.

in having a forked terminal spur on the protibia, but is easily distinguished from the latter by the following characters: 1) body is more distinctly shining instead of being distinctly opaque; 2) elytral intervals are densely and strongly punctate on either side, sparsely to very sparsely in the middle along midline, whereas in *C. sabinus*, they are wholly, densely and very strongly punctate; 3) in male, pronotum is sparsely and coarsely punctate except for sparsely and finely punctate anterior declivity, whereas in *C. sabinus*, it is densely and rugosely punctate except for anterior four tubercles; 4) in female, clypeus is almost impunctate except for punctate narrow lateral portion, whereas in *C. sabinus*, it is more broadly punctate.

***Copris* (*Copris*) *parapecuarius* sp. nov.**

(Figs. 4, 17–20)

Length: 17.0–18.6 mm; width: 8.9–10.5 mm (n=5).

Body moderate-sized though a little smaller than the preceding species, oval, not so strongly convex above; dorsal side weakly shining, entirely glabrous; ventral side also weakly shining, partly clothed with reddish hairs. Colour uniformly black; mouth organs, palpi, antennae, and legs reddish brown.

Male. Head transverse, semicircular in outline; clypeal margin shallowly and a little widely incised at the middle, with either side of the incision slightly lobed and reflexed, the remaining margin broadly bordered and a little reflexed; genae strongly produced laterad, with genal corner just a right angle or a little wider, marginal border broad in front and narrow behind; cephalic horn located in the middle a little before the level of eyes, short, at most about 1.2 mm in length (the holotype specimen may belong to smaller individual, judging from the comparing with larger female specimens); surface with clypeus shining, smooth and almost impunctate though slightly wrinkled transversely along clypeal margin, genae strongly and a little densely punctate except for narrow smooth and impunctate area along each clypeo-genal suture, frons to vertex scattered with several strong punctures on either side near eye and almost impunctate on the remaining portion.

Pronotum less strongly convex than in the preceding species, about 1.6 to 1.7 times as wide as long (n=3), with a distinct median longitudinal groove along midline in basal two-thirds; anterior margin bi-sinuate, rather broadly bordered; lateral margins finely bordered, briefly and nearly straight in front, weakly sinuate at the middle, gently rounded behind; anterior angles well produced forward, obtusely and roundly angulate; posterior angles obtuse; base with a fine transverse groove along basal margin; basal margin clearly bordered throughout, obtusely angulate at the middle; disc briefly declivous in front, with the upper edge of the declivity bearing four transversely and equidistantly arranged obtuse prominences; the inner two prominences each forming short transverse ridge, and the outer two prominences a little tuberculate; surface weakly shining, rather densely covered with strong punctures except for almost smooth, sparsely and finely punctate anterior declivity, the punctures becoming clearly larger, denser and partly duplicate towards sides; in smaller males, the prothoracic prominences reduced to a slight tubercles in front.

Elytra strongly convex, about 1.1 times as wide as long (n=3), with 10 striae on each elytron, 9th and 10th almost confluent in basal third, 8th interrupted or missing near apex, 1st and 10th, 2nd and 9th, 3rd and 8th distinctly joined near apex, 4th and 5th, 6th and 7th not distinctly joined or isolated at apex; all the striae fairly strongly and rather broadly grooved, clearly micro-sculptured in the groove; strial punctures distinct, each with a small, round and shining granule in the middle, clearly notching both interval margins; intervals weakly but clearly convex, especially so on suture, slightly shining, sparsely and finely punctate, the punctures becoming a little larger towards outer intervals.

Pygidium transverse, gently convex, shining, a little densely covered with strong, round to transversely round punctures. Metasternum with a distinct median longitudinal groove in basal two-thirds along midline, and with a small transverse groove near apex; metasternal shield glabrous, weakly shining, sparsely and very finely punctate in the middle, densely and coarsely punctate on either side; lateral portions less shining, densely covered with setiferous large punctures. Protibiae broad, with three external teeth; terminal spur ordinary, elongate and slightly spatulate at apex.

Aedeagus rather robust, about 5.7–5.9 mm (n=2) in total length. Phallobase about 2.9–3.0 mm (n=2) in length from lateral view, about 1.1 mm (n=2) in apical width from dorsal view. Parameres a little broad in dorsal view, fairly high, stout and about 2.8–2.9 mm (n=2) in length from lateral view; both dorsal lobes somewhat fine and apices right-angularly incurved from dorsal view; dorsal membranes well developed, broad and elongate; ventral side with membranes occupying apical two-thirds, which are sub-eliptical.

Female. Head with a somewhat elevated transverse carina on frons, which is curved forward and slightly emarginated at the summit; surface distinctly and transversely wrinkled or sculptured on apical half of clypeus, almost the same as in male on the remaining portions. Pronotum almost simply formed, less convex dorsally than in male, briefly declivous in front, though not bearing distinct carina or tubercle on the upper edge of the declivity; surface more strongly punctate than in the male, especially denser and larger on lateral portions. Protibiae a little broader, with the same terminal spur as well as in male.

Type series. Holotype: ♂, Chudo Rozi, N. E. Kachin, Myanmar, VII. 2005. Paratypes: 2♂♂, 2♀♀, the same data as the holotype.

Distribution. Myanmar.

Etymology. This species means that the present new species is a little similar to *Copris pecuarius* LEWIS.

Notes. The present new species is closely related to *Copris* (*Copris*) *kusakabei* OCHI, KON et KAWAHARA from Myanmar, but can be easily distinguished from the latter by the following characters: 1) body is distinctly smaller; 2) intervals of elytron are slightly shining, sparsely and finely punctate, whereas in *C. kusakabei*, they are weakly but distinctly micro-rugose, and sparsely and finely punctate; 3) lateral margin of pronotum is briefly and nearly straight in front, weakly sinuate at the middle, gently rounded behind, whereas in *C. kusakabei*, it is distinctly bisinuate in front and gently rounded behind; 4) in male genitalia, parameres are clearly shorter and narrower in dorsal view, whereas in *C. kusakabei*, the parameres are clearly larger and fairly broader in dorsal view.

Acknowledgments

We wish to express our cordial thanks to Mr. Keiichi TSUKAMOTO for invaluable materials.

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要　約

越智輝雄・近　雅博・河原正和：カンボジア及びミャンマー産ダイコクコガネ属の4新種.——カンボジアからダイコクコガネ属の1新種 *C.* (*Copris*) *cambodiensis* sp. nov., ミャンマーから3新種 *C.* (*C.*) *kachinensis* sp. nov., *C.* (*C.*) *tsukamotoi* sp. nov., *C.* (*C.*) *parapecualius* sp. nov. を記載した.

Errata and Corrigenda

Teruo OCHI, Masahiro KON and Ming BAI: Three new species of the genus *Copris* (Coleoptera: Scarabaeidae) from China.
Ent.omological Review Japan, **62**: p. 140:
Line 20, for *Copris yang* sp. nov. .... read *Copris yangi* sp. nov.

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Ent. Rev. Japan, **62** (2): 255–271

New Species of the Genus *Onthophagus* (Coleoptera: Scarabaeidae) from Thailand
Part 2. Ten More New Species from Various Areas of Thailand

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Abstract As the second part of the present study on the Thai scarabaeid genus *Onthophagus*, ten more new species from various areas of Thailand are dealt with. The new species are described under the following names: *Onthophagus* (*Indachorius*) *chumphonensis* sp. nov.; *O.* (*Onthophagus*) *phatoensis* sp. nov.; *O.* (*Sunenaga*) *kaengkrachangus* sp. nov.; *O.* (*Furconthophagus*) *khonkaenus* sp. nov.; *O.* (*O.*) *wangnamkieous* sp. nov.; *O.* (*O.*) *tungkamungensis* sp. nov.; *O.* (*O.*) *konsarnensis* sp. nov.; *O.* (*O.*) *isanus* sp. nov.; *O.* (*O.*) *sangwalus* sp. nov.; *O.* (*O.*) *kaosoidowensis* sp. nov.

Succeeding to the previous paper (MASUMOTO *et al.*, 2007), the present authors are dealing with ten more new species of the genus *Onthophagus* collected from various areas of Thailand.

Before going further in details, the authors should express to the TRF/BIOTEC Special Programme for Bio-diversity Research and Training Grant of Thailand (BRT 142012), for their financial support, and to Dr. Hans BÄNZIGER, Chiang Mai University, who offered materials of his collections from North and South Thailand. The authors also thank Dr. Makoto KIUCHI, Tsukuba City, for taking very clear photographs of the type specimens inserted in this paper.

Depositories of the holotypes of the new species to be designated are given in the text with the following abbreviations: NSMT (=National Museum of Nature and Science, Tokyo, Japan), EMKKU (=Entomology Division Museum, Faculty of Agriculture, National Khon Kaen University, Khon Kaen, Thailand); DEFACU (=Department of Entomology, Faculty of Agriculture, Chiang Mai University, Chiang Mai, Thailand).

Descriptions of New Species

Onthophagus (*Indachorius*) *chumphonensis* sp. nov.

(Figs. 1, 11, 12)

Brownish black, apical parts of head, mouth parts, gula and legs reddish brown, elytra with large yellow bands in basal parts, also with small bands in apical parts, and further with small patches at apical 1/3 in lateral parts, head and pronotum with feeble coppery tinge; head, particularly in posterior part, dull and sericeous, pronotum rather strongly, vitreously shining, elytra, metasternum, abdomen and legs moderately shining; each surface covered with long, suberect hairs. Body subovate, rather strongly convex, though the elytra are weakly depressed in medial parts.

Male. Head subhexagonal, gently inclined anteriad, covered with isodiametric microsculpture; clypeus rather transverse, fairly closely punctate, each puncture with a suberect hair, with apical margin gently reflexed and truncate in front, fronto-clypeal border very slightly curved and ridged, bent anteriad in lateral parts and reaching outer margins; genae (ocular lobes) feebly depressed with outer margins rounded and finely rimmed, scattered with larger punctures, which are sparsely intermixed with smaller ones; frons wide, gently raised posteriad and without any tubercles nor horn, sparsely and irregularly scattered with larger and smaller punctures; vertex gently inclined posteriad. Eyes crescent-shaped, rimmed along outer margins.

Pronotum 1.54 times as wide as long; apex gently emarginate, widely produced anteriad in middle, sinuous on each side, wholly finely rimmed; front angles acutely produced, hind angles obtuse; base rounded, margined by a row of small punctures; lateral margins roundly produced, obliquely narrowed in posterior halves, wholly finely margined and rimmed; disc strongly convex, rather closely, strongly punctate, each puncture with a long suberect hair, with a small impunctate area at the middle.

Elytra punctato-striate, the punctures in striae small and feebly notching intervals; intervals gently convex, with rows of haired punctures along the striae, which are often connected with strial punctures.

Pygidium gently convex in middle, rather closely punctate, each puncture with a fine, rather long hair. Male genitalia 0.68 mm in length, 0.29 mm in width, strongly bent at the border between basal piece and lateral lobes.

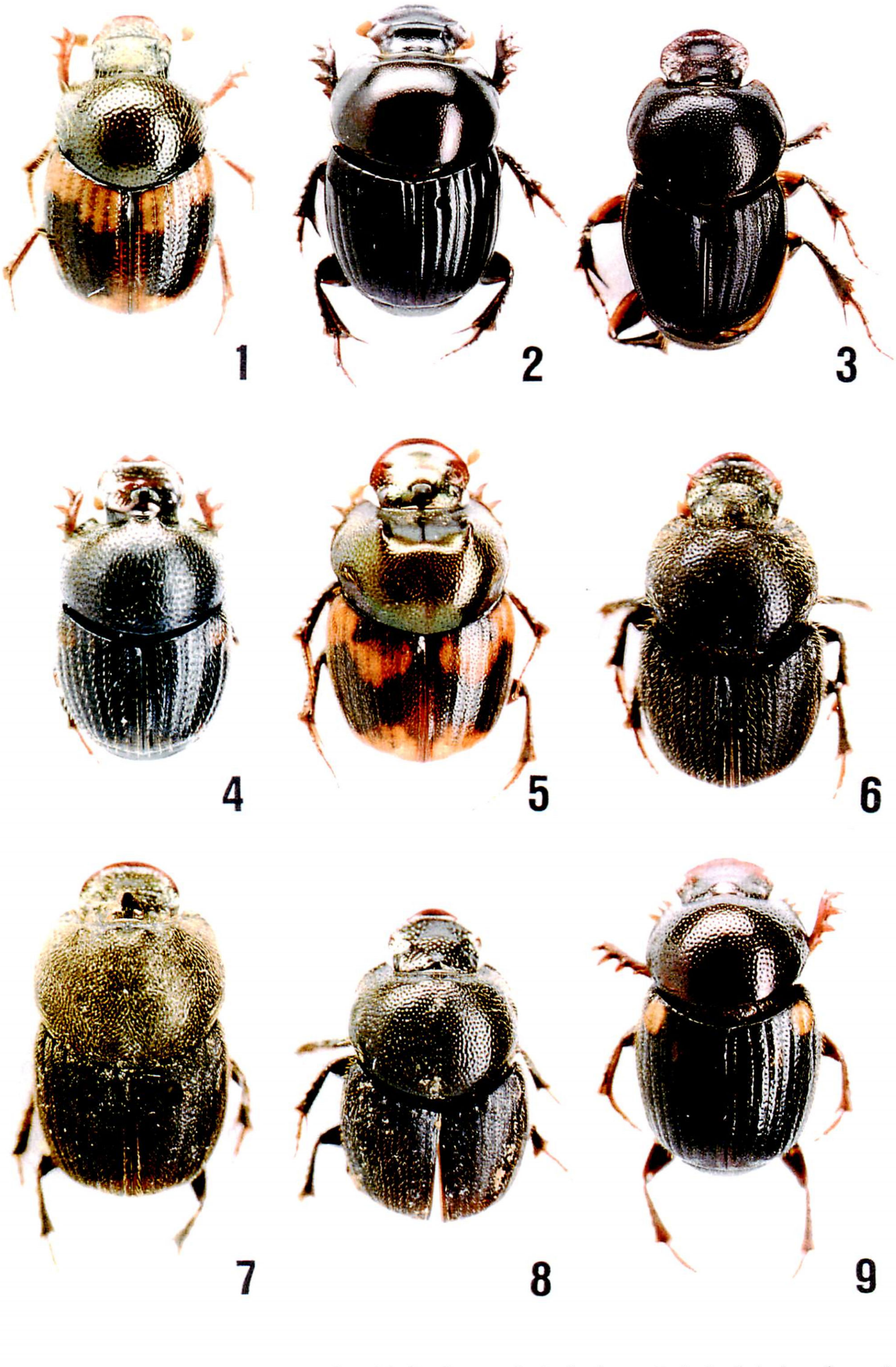
Legs ordinary in shape in members of *Onthophagus*; protibiae with three outer teeth, and often with a very small fourth tooth behind the third, terminal spur rather sharp, curved exteroventrad; ratios of the lengths of spur of metatibia and metatarsal segments: 0.52; 1.00, 0.28, 0.19, 0.11, 0.26.

Female. Clypeus transversely rugulose; genae rugoso-punctate; frons with a pair of low oblique elevations in posterior part; pronotum more strongly and coarsely punctate.

Body length: 3.9–4.3 mm.

Holotype: ♂, "Phato, Chumphon Prov., S. Thailand, 7. II. 2007, (D-150), H. BÄNZIGER leg." (DEFACU). Paratypes: 3 exs., same locality and collector, 13. III. 2007, (D-149, 151, 243), 1ex., 8. II. 2007, (D-242).

Notes. The present new species closely resembles *Onthophagus* (*Indachorius*) *baenzigeri* MASUMOTO, OCHI et HANBOONSONG, 2007, from the same locality, Phato, Chumphon Prov., S. Thailand, but can be distinguished from the latter by the head in male covered with isodiametric



Figs. 1–9. Habitus of *Onthophagus* spp. from Thailand. —— 1, *Onthophagus* (*Indachorius*) *chumphonensis* sp. nov., male, holotype; *O.* (*Onthophagus*) *phatoensis* sp. nov., male, holotype; 3, *O.* (*Sunenaga*) *kaengkrachagus* sp. nov., male, holotype; 4, *O.* (*Furconthophagus*) *khonkaenus* sp. nov., male, holotype; 5, *O.* (*O.*) *wangnamkieous* sp. nov., male, holotype; 6, *O.* (*O.*) *tungkamungensis* sp. nov., female, holotype; 7, *O.* (*O.*) *konsarnensis* sp. nov., male, holotype; 8, *O.* (*O.*) *isanus* sp. nov., male, holotype; 9, *O.* (*O.*) *sangwalus* sp. nov., male, holotype.

microsculpture, finely punctate, and with a low ridge along fronto-clypeal border, the eye smaller, the pronotum less strongly produced laterad, less strongly punctate, and with front angles acuter, and the elytra wider.

The specific name is given after the place where the holotype was collected.

Onthophagus (*Onthophagus*) *phatoensis* sp. nov.

(Figs. 2, 13, 14)

Piceous, anterior part of head and pronotum with feeble coppery tinge, antennae except for funicles, mouth parts, gula and tarsi dark reddish brown; dorsal surface and ventral surfaces of legs strongly shining, ventral surfaces except for legs moderately shining; each surface almost glabrous, antennal funicles covered with minute pale hairs. Body compact, convex dorsad though the posterior parts being gently flattened.

Male. Head transversely subelliptical; clypeus wide and gently produced apicad, weakly raised medio-posteriad, with apical margin reflexed, and very slightly truncate in front, transversely rugulose, scattered with microscopic punctures, each with a minute decumbent hair, fronto-clypeal border gently curved anteriad and weakly ridged, the ridge bent in lateral parts and barely reaching outer margins; ocular lobes gently depressed, scattered with small punctures, with outer margins obtusely produced laterad; frons rather obtrapezoidal, transversely and straightly ridged in middle, the ridge short and much stronger than that on fronto-clypeal border, rather steeply inclined anteriad, moderately so posteriad, scattered with minute punctures; vertex concave, rather closely punctate, with a low impunctate swelling at the middle. Eyes crescent-shaped, bordered by rims.

Pronotum 1.62 times as wide as long; anterior margin slightly emarginate, feebly sinuous in lateral parts, finely rimmed; front angles subrectangular, with rounded corners in dorsal view, hind angles obtuse; lateral margins roundly produced in dorsal view, clearly bordered and finely rimmed, obliquely truncate and feebly sinuous before hind angles; base rounded, very slightly angled at the centre, wholly finely rimmed; disc strongly convex, closely punctulate, the punctures smaller than those on posterior part of frons, with a shallow median groove in anterior and posterior parts.

Elytra clearly punctato-striate, the punctures in striae weakly notching intervals; intervals moderately convex, scattered with minute punctures, which are smaller and closer than those on pronotum.

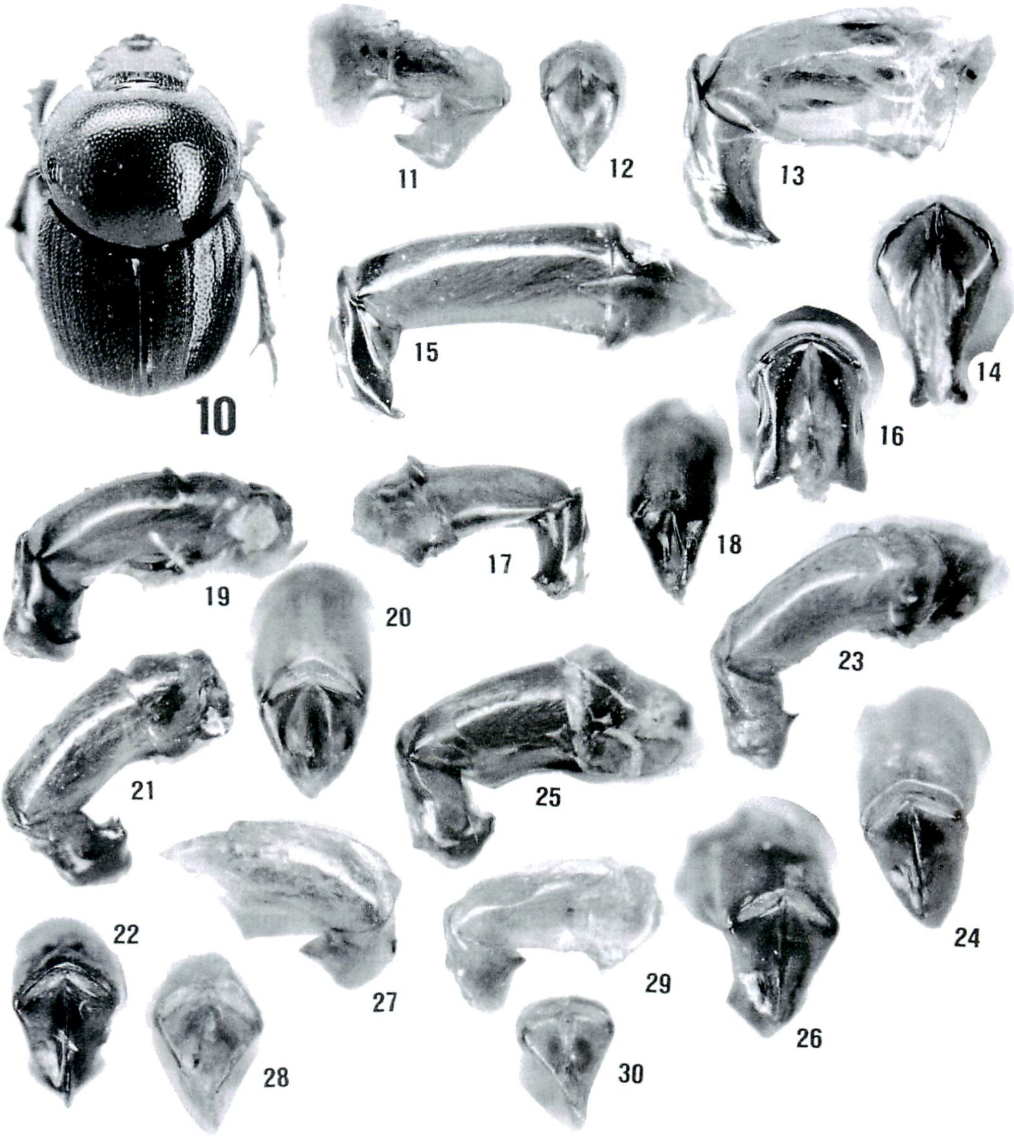
Pygidium gently convex, closely punctate, the punctures often fused with one another. Male genitalia about 2.25 mm in length, 0.75 mm in width, rather strongly bent at the border of basal piece and lateral lobes.

Legs stout; protibiae with four outer teeth; ratios of the lengths of spur of metatibia and metatarsal segments: 0.88; 1.16, 0.35, 0.24, 0.20, 0.38.

Female. Dorsal surfaces more strongly punctate, with cephalic ridges obviously weaker, and pronotum without steep declivity in front.

Body length: 8.6–10.7 mm.

Holotype: ♂, "Phato, Chumphon, Thailand, 8. II. 2007, (D-160), H. BÄNZIGER leg." (DEFACU). Paratypes: 1 ex., same data as the holotype, (D-161); 1 ex., same locality and collector as the preceding data, 13. II. 2007, (D-162).



Figs. 10–30. *Onthophagus* spp. from Thailand. — 10, Habitus of *O.* (*Onthophagus*) *kaosoidowensis* sp. nov., male, holo type; 11–30, male genitalia, 11–12, *Onthophagus* (*Indachorius*) *chumphonensis* sp. nov., 11, lateral view, 12, frontal view; 13–14, *O.* (*O.*) *phatoensis* sp. nov., 13, lateral view, 14, frontal view; 15–16, *O.* (*Sunenaga*) *kaengkrachangus* sp. nov., 15, lateral view, 16, frontal view; 17–18, *O.* (*Furconthophagus*) *khonkaenus* sp. nov., 17, lateral view, 18, frontal view; 19–20, *O.* (*O.*) *wangnamkieous* sp. nov., 19, lateral view, 20, frontal view; 21–22, *O.* (*O.*) *tungkamungensis* sp. nov. 21, lateral view, 22, frontal view; 23–24, *O.* (*O.*) *konsarnensis* sp. nov., 23, lateral view, 24, frontal view; 25–26, *O.* (*O.*) *isanus* sp. nov., 25, lateral view, 26, frontal view; 27–28, *O.* (*O.*) *sangwalus* sp. nov.; 27, lateral view, 28, frontal view; 29–30, *O.* (*O.*) *kaosoidowensis* sp. nov., 29, lateral view, 30, frontal view.

Notes. The present new species resembles *Onthophagus* (*O.*) *rutilans* SHARP, 1875, described from the Malaysia, but can be easily distinguished from the latter by the pronotum in large males possessing a steep declivity just behind the anterior margin, whose upper edge forms a transverse, somewhat bisinuous ridge (without steep declivity in *O. rutilans*), the head with two transverse ridges, of those the posterior one obviously strongly elevated and distinctly straight (less strongly elevated and a little curved at the middle in *O. rutilans*), and the distance between these clearly shorter than that of *O. rutilans*, posterior portion of the head and the pronotum with slightly purplish tinge (usually strong purplish or greenish luster in *O. rutilans*), and the male genitalia with a sharp apical tooth in lateral view (not sharp in *O. rutilans*).

This new species is also closely related to *Onthophagus* (s. str.) *akhanus* MASUMOTO *et al.*, 2007, from Pisanulok, Nakhon Ratchasima, Chaiyaphum and Chiang Mai, Thailand, but can be distinguished from the latter by the head in male with two transverse ridges on the fronto-clypeal border and frons, the posterior one obviously straight and more obtusely edged at the summit (the posterior one curved anteriad in middle and sharply edged at the summit in *O.* (s. str.) *akhanus*), and also the head in male less weakly wrinkled on the clypeus, more finely and sparsely punctate on the genae (distincltly wrinkled on the clypeus and more closely and coarsely punctate on the genae in *O.* (s. str.) *akhanus*), the pronotum in male steeply declivous in front, with the anterior edge of the declivity distinctly straight (bisinuous in *O.* (s. str.) *akhanus*), the elytra shining (rather opaque in *O.* (s. str.) *akhanus*), and the lateral lobes of male genitalia slightly longer and two apical teeth obviously stronger.

The specific name is derived from the place where the holotype was collected.

***Onthophagus* (*Sunenaga*) *kaengkrachangus* sp. nov.**

(Figs. 3, 15, 16)

Dark reddish brown, head except for outer marginal area, pronotum except for antero-lateral parts, elytra, pygidium, dorsal sides of legs piceous, antennal funicles reddish yellow, head and pronotum with feeble coppery tinge; head and pronotum weakly shining, elytra dully, somewhat sericeously shining, legs and metasternum moderately shining, abdomen rather alutaceous; dorsal surface with short hairs, ventral surface sparsely with long hairs. Body oval and compact, rather feebly convex dorsad, flattened in posterior portion.

Male. Head suboctagonal, gently inclined apicad, feebly covered with isodiametric microsculpture; clypeus wide, sparsely scattered with rounded punctures, with apex produced anteriad and noticeably reflexed in front, fronto-clypeal border curved anteriad and raised; genae semicircular, weakly depressed, irregularly punctulate, with outer margins rounded; frons narrow, weakly divergent and inclined anteriad, scattered with punctures; vertex with a low, impunctate and sublinguform horn at the middle. Eyes slightly larger than in members of *Onthophagus* in dorsal view.

Pronotum 1.23 times as wide as long; anterior margin gently emarginate, margined, the margin becoming bolder in middle; front angles subrectangular and directed anteriad, hind angles obtuse; lateral margins roundly produced, finely bordered, feebly sinuate before hind angles; base moderately triangular and very feebly sinuous on each side, finely bordered; disc weakly covered with isodiametric microsculpture, rather closely punctate, the punctures being of the same size on head, and sparsely intermixed with smaller punctures, weakly depressed in postero-medial part, with a pair of declivities near hind angles.

Elytra shallowly but clearly punctato-striate, the striae finely margined, the punctures in striae round and slightly notching intervals; intervals moderately convex, covered with isodiametric microsculpture, scattered with small but deep punctures, which become larger and closer in lateral intervals.

Pygidium gently convex, covered with isodiametric microsculpture, rather closely, coarsely scattered with setigerous punctures, which are intermixed with minute punctures. Male genitalia 2.43 mm in length, 0.91 mm in width, bent at the border of basal piece and lateral lobes.

Femora and tibiae stout; protibiae quadridentate along outer margin, with inner side of terminal edge blunt-projected; terminal spur rather bold; tarsi slender, ratios of the lengths of spur of metatibia and metatarsal segments: 0.97; 1.31, 0.38, 0.26, 0.21, 0.48; claws falciform and rather weak.

Female. Head rather transversely rugoso-punctate, with fronto-clypeal border distinctly ridged, instead, vertex not ridged; pronotum more coarsely punctate.

Body length: 11.1–11.3 mm.

Holotype: ♂, "Hill Evergreen Forest, Amphur Kaengkrachang, Phetchabun Prov., Thailand, 1. VIII. 00 (=2000), Y. HANBOONSONG leg." (EMKKU). Paratype: 1 ex., same data as the holotype.

Notes. The present new species is related to *Onthophagus* (*Sunenaga*) *avocetta* ARROW, 1933, described from Myanmar and Assam, but can be easily distinguished from the latter by the body smaller, intervals of the elytra rather sparsely covered with small but deep punctures (closely covered with small punctures in *O. avocetta*), outer intervals (4th to 8th) a little convex with punctures larger and closer (almost flat to only slightly convex with punctures not so modified in *O. avocetta*), the areas of front angles of the pronotum and all femora yellowish brown (the body uniformly brownish black in *O. avocetta*), and each paramere of male genitalia distinctly produced as an elongate tooth at the apex (the apical tooth obviously short in *O. avocetta*).

The specific name is given after the place where the holotype was collected.

***Onthophagus* (*Furconthophagus*) *khonkaenus* sp. nov.**

(Figs. 4, 17, 18)

Piceous, with anterior margin of head and legs dark reddish brown, antennal clubs, mouth parts and gula yellowish brown, elytra with a pair of obscure patches in humeral parts, and also with a pair of small patches in outer parts of posterior margins; head and anterior declivity of pronotum strongly shining with coppery lustre, major part of pronotum and elytra dully, rather strongly shining, legs moderately shining with feeble coppery lustre, metasternum and abdomen rather alutaceous; head sparsely haired, pronotum and elytra densely covered with suberect setae, ventral surface partly covered with setae and hairs. Body broadly oval, rather strongly convex dorsad, gently flattened in posterior parts.

Male. Head somewhat transversely elliptical; clypeus inclined anteriad, then rather strongly reflexed in front, scattered with microscopic punctures, also with larger punctures in lateral parts, each with a granule and seta at anterior edge; apex with apical margin belobed at the middle, each lobe blunt-angulate; fronto-clypeal border not defined but curved and gently raised;

clypeo-genal borders finely sulcate; ocular lobes somewhat triangular, slightly depressed, irregularly punctate, with outer margins weakly produced; frons not wide, somewhat triangular, finely punctate, with a slightly, backwardly curved horn at the centre of hind margin; vertex steeply inclined, almost impunctate. Eyes crescent-shaped in dorsal view, rather narrow compared with other members of *Onthophagus*.

Pronotum wider than long (7 : 5); anterior margin widely emarginate, wholly finely rimmed; front angles sharply produced anteriad, with apices directed antero-laterad, hind angles rounded; lateral margins roundly produced laterad, finely bordered and rimmed; base widely rounded, feebly angled at the middle, finely rimmed; disc weakly covered with isodiametric microsculpture, closely scattered with ocellate punctures, each with a stiff seta; front margin nearly vertical in middle, with the upper edge possessing a bifurcate horizontal process slightly projecting over head at the middle.

Elytra wider than long (7 : 5), shallowly striate, the striae consisting of chains of large, transversely subovate punctures; intervals feebly convex, covered with isodiametric microsculpture, with rows of small punctures, each with a minute granule and stiff seta at anterior edge.

Pygidium gently convex, covered with isodiametric microsculpture, rather densely scattered with shallow subovate punctures, each with a minute seta. Male genitalia 0.98 mm in length, 0.32 mm in width, strongly bent at the border of basal piece and lateral lobes.

Protibiae with three large teeth and a small tooth in antero-lateral margin, with terminal spur gently curved laterad; ratios of the lengths of spur of metatibia and metatarsal segments: 0.87; 1.00, 0.31, 0.25, 0.21, 0.36.

Female. Head with a curved ridge on the fronto-clypeal border, and also with a curved ridge on vertex instead of a horn, pronotum with a blunt swelling instead of a bifurcate horizontal process.

Body length: 4.0–4.6 mm.

Holotype: ♂, "Khon Kaen University, Khon Kaen, NE. Thailand, 30. XI. 1998, K. MASUMOTO leg." (NSMT). Paratypes: 2 exs., same data as the holotype.

Notes. The present new species resembles *Onthophagus* (*Furconthophagus*) *amicus* (GILLET, 1925), originally described from India, but can be easily distinguished from the latter by the head in male with a horn at the midst of the border between the frons and vertex, and the pronotum also with a bifurcate horizontal process at the centre of upper edge of the front declivity, and the head in female with two ridges, of which the latter is not straight like in *O. amicus* but curved, and the pronotum also not with a bifurcate horizontal process but a blunt swelling. Elytra in both sexes with rows of small punctures, each with a minute granule and stiff seta at the anterior edge.

The specific name is given after the place where the holotype was collected.

Onthophagus (*Onthhophagus*) *wangnamkieous* sp. nov.

(Figs. 5, 19, 20)

Piceous, head with dark greenish or partly coppery lustre, pronotum with greenish lustre, elytron black, with a larger orange band lying from 2nd to 8th intervals in basal part, whose posterior margin is bulged in the 4th interval and withdrawn at the 6th stria, also with a blackish part from 3rd to 5th intervals close to base, and further with a smaller orange band lying from

2nd to 6th intervals in distal part, sutural intervals and legs dark reddish brown, antennal funicles, gula and mouth parts reddish brown, antennal clubs yellowish brown; head and anterior part of pronotum strongly, metallically shining, posterior part of pronotum moderately shining, elytra and pygidium weakly, somewhat sericeously shining, metasternal shield and abdomen rather sericeously shining; head and anterior and lateral parts of pronotum almost glabrous, major medial and posterior parts of pronotum covered with rather dense decumbent hairs, elytra also with rather dense decumbent hairs, though they are finer than those on the pronotum, metasternal shield and ventral sides of legs more or less haired, basal parts of abdominal sternites with bent setae. Body ovate and compact, strongly convex dorsad, gently flattened in posterior parts.

Male. Head transversely subelliptical, gently inclined anteriad; clypeus rather broad, feebly covered with isodiametric microsculpture, scattered with microscopic punctures, sparsely so with larger punctures in lateral parts, apex gently, roundly produced and reflexed, with a punctate groove along margin in medial part; fronto-clypeal border not defined, feebly, transversely raised in middle; clypeo-genal borders traceable by fine sulci; ocular lobes weakly depressed before eyes, scattered with minute punctures and sparsely so with large punctures, with outer margins weakly produced, reflexed and smoothly continuous with apical margins of clypeus; frons somewhat triangular, sparsely scattered with minute punctures, with an upright horn at the middle of the border of vertex at the mid-eye level; vertex steeply inclined. Eyes crescent-shaped, margined by fine rims.

Pronotum wider than long (7 : 5); anterior margin slightly emarginate, finely rimmed; front angles slightly acute, directed in front, hind angles obtuse; lateral margins rather strongly, roundly produced laterad, weakly sinuous before hind angles, noticeably bordered and rimmed; base rounded, very slightly angulate at the middle, not rimmed but with rows of small punctures; disc strongly convex, closely punctate, each puncture with a decumbent hair, steeply declivous in an anterior third, the declivity almost impunctate and with upper edge defined by a pair of strong and rather longitudinal prominences.

Elytra slightly wider than long (8 : 7), shallowly punctato-striate, the punctures in striae rather closely set and weakly notching intervals; intervals rather wide, feebly convex, rather irregularly punctate, each puncture with a decumbent hair.

Pygidium gently convex, rather closely punctate, each puncture with a fine decumbent hair at the centre. Male genitalia 1.51 mm in length, 0.67 mm in width, strongly bent at the border of basal piece and lateral lobes.

Legs rather stout; male protibiae strongly quadridentate; terminal spur of metatibia slightly hooked; ratios of the lengths of terminal spur of metatibia and metatarsal segments: 0.75; 0.78, 0.26, 0.12, 0.08, 0.26.

Female. Clypeus transversely rugulose, with a curved ridge on the border of frons; frons with a narrow, transverse ridge on the border of vertex; pronotum not so steeply declivous in front, and only with a pair of small tubercles at the upper edge of the declivity.

Body length: 6.2–6.4 mm.

Holotype: ♂, "Wang Nam Kieo, Nakhon Ratchasima Prov., Thailand, 29-30. VIII. 2000, Y. Utsumomiya leg." (NSMT). Paratypes: 3 exs., same data as the holotypes; 1 ex., "Phuwua wildlife sanctuary, ♂, Dry-dipt. F., 280 m, 14. 10. 00".

Notes. The present new species is closely related to *Onthophagus* (s. str.) *carinensis* Boucomont, 1914, from Myanmar, but can be easily distinguished from the latter by the pygidium weakly convex, with annular punctures smaller, sparser and shallower (rather strongly convex, distinctly rugose, closely covered with strong and coarse punctures in *O. carinensis*), the elytron with intervals more closely covered with a little smaller punctures, and the head in male more transverse, with the fronto-clypeal suture completely or almost effaced (the head in the same more strongly produced anteriad, with the fronto-clypeal suture distinct and clearly raised at the middle in *O. carinensis*), the pronotum in male steeply declivous in an anterior third, with each side of the declivity defined by a strongly and rather longitudinally produced prominence (not steeply declivous in front, with three tubercles at the middle slightly behind the anterior margin in *O. carinensis*).

This new one also resembles *O. ratchashimaensis* MASUMOTO *et al.*, 2002, originally described from the same locality as the holotype of this new species, but can be distinguished from the latter by the head smoother with a strong horn, the pronotum more widened, more noticeably covered with hairs, with a pair of protuberances at the upper edge of steeper front declivity, and the elytra more shallowly punctato-striate, and irregularly covered with punctures, each without granule.

In the specimen from Phuwua wildlife sanctuary, the elytra are almost black in coloration, with orange spots near humral parts.

The specific epithet is the name of place where the holotype was collected.

***Onthophagus* (*Onthophagus*) *tungkamungensis* sp. nov.**

(Figs. 6, 21, 22)

Piceous, with anterior margin of head, scape and funicle of antennae, mouth parts, gula and tarsi dark reddish brown, antennal clubs brownish yellow; head and dorsal surfaces of legs moderately shining with dark greenish lustre, pronotum dully shining, elytra feebly sericeous, ventral surface rather alutaceous with feeble coppery lustre; dorsal surface rather densely covered with fine setae, ventral surface covered with fine hairs or setae, which are sparser than on dorsal surface. Body ovate, strongly convex dorsad, gently flattened in posterior part, rather remarkably constricted between pronotum and elytra.

Male. Head semicircular, weakly inclined anteriad; clypeus scattered with punctures, with apical margin roundly produced and rather strongly reflexed, fronto-clypeal border not impressed but curved and raised; clypeo-genal sutures impressed, reaching outer margins; ocular lobes weakly depressed, punctate, with outer margins weakly produced laterad; frons weakly dilated towards fronto-clypeal border, highest at the centre of the border of vertex, then inclined anteriad, more closely scattered with smaller punctures than on clypeus; vertex with an upright horn, which is slightly transverse in basal part and shining in apical part. Eyes slightly narrower than those in other members of *Onthophagus*, finely rimmed along interior margins.

Pronotum wider than long (7 : 5); anterior margin gently, weakly emarginate, almost straight widely in middle, finely rimmed; front angles slightly acute, hind angles very obtuse; lateral margins roundly produced laterad, finely rimmed, weakly sinuate in posterior parts; base rounded, blunt-angulate at the middle, wholly finely rimmed; disc rather strongly convex, very weakly covered with isodiametric mircosculpture, rather closely scattered with small setiferous punctures, almost vertically declivous in anterior marginal part, with a pair of blunt tubercles at upper edge of the declivity.

Elytra slightly wider than long, shallowly punctato-striate like chains, the striae very finely margined, the punctures in striae weakly notching intervals; intervals feebly convex, covered with isodiametric microsculpture, scattered with small puncture, each with a long seta and small granule on anterior side.

Pygidium weakly convex, feebly covered with isodiameteric microsculputure, rather densely punctate, each punctures with a fine seta.

Protibiae weakly incurved on interior face, with three strong teeth and a small one on exterior face; ratios of the lengths of terminal spur of metatibia and metatarsal segments: 0.79; 1.00, 0.26, 0.22, 0.18, 0.35.

Female. Unknown.

Body length: 4.8–5.6 mm.

Holotype: ♂, "Phukhieo wildlife sanctuary, Chaiyaphum Prov., NE. Thailand, Dung Trap: Pig Dung, Col: Chris DICKINSON" (EMKKU). Paratype: 1 ex., "Doi Inthanon, Chiang Mai Prov., N. Thailand, 28. V. 1988, M. YIMYAEM leg."

Notes. The present new species is closely related to *Onthophagus* (*Onthophagus*) *mirandus* ARROW, 1931, from North India, but can be easily distinguished from the latter by the body obviously smaller, the head rounded in front (slightly truncated at the middle or weakly emarginate in *O. mirandus*), and not produced behind eyes, the pronotum with front angles produced anteriad and angulate at tip (not produced anteriad, and blunt-rounded in *O. mirandus*), and also with lateral margins evenly rounded in the middle (not evenly rounded in the middle in *O. mirandus*), and the head in male evenly covered with strong setiferous punctures (very sparsely covered with several punctures in *O. mirandus*).

The specific name is given after the site at the Phukhieo wildlife sanctuary where the holotype was collected.

***Onthophagus* (*Onthophagus*) *konsarnensis* sp. nov.**

(Figs. 7, 23, 24)

Piceous, with anterior margin of head, scape and funicle of antennae, mouth parts, gula, tibiae and tarsi dark reddish brown, antennal clubs dusty yellow; head and tubercles on pronotum moderately shining with dark greenish or coppery lustre, pronotum and elytra opaque, with sutural intervals with coppery lustre, legs moderately shining, prepisterna and metasternal schield gently shining, metepisterna and abdomen rather alutaceous; dorsal surface rather densely covered with fine setae, ventral surfaces except for abdomen covered with fine hairs, which are sparser than on dorsal surface, abdomen with rows of setae along each basal margin. Body ovate, strongly convex dorsad, gently flattened in posterior part, constricted between pronotum and elytra, the former obviously wider than the latter.

Male. Head semicircular, nearly flat and rather smooth, fairly closely covered with setiferous punctures and sparsely scattered with microscopic punctures; clypeus feebly rugulose in antero-lateral part, with outer margin noticeably reflexed, fronto-clypeal border not defined but weakly ridged, clypeo-genal borders finely sulcate; ocular lobes somewhat triangular, with outer margins moderately rounded, very weakly depressed before eyes; frons somewhat triangular with borders being unclear, inclined anteriad, with an upright horn in posterior part at the middle of eye level, the horn bold and round in the basal part, gradually tapering apicad, and semicircular (the posterior half lacking) in the apical part in dorsal view; vertex depressed in area behind the horn. Eyes medium-sized, crescent-shaped, finely rimmed along interior margins.

Pronotum wider than long (5 : 4); anterior margin gently emarginate, feebly produced widely in middle, finely margined; front angles subrectangular, hind angles obtuse; lateral margins gently rounded, feebly sinuate before hind angles, finely rimmed, the rims invisible from above due to the sides of pronotum convex laterad; base gently and evenly rounded, finely rimmed only in medial part; disc strongly convex, steeply declivous in front, with two pairs of tubercles on upper edge of the declivity, weakly depressed in medio-basal part, wholly closely punctate, the punctures with fine bent setae and often fused with one another.

Elytra slightly wider than long; disc shallowly punctato-striate like chains; intervals feebly convex, covered with isodiametric microsculpture, 1st interval with a row of setiferous punctures, each with a granule at anterior edge, 2nd interval to 6th with two or three rows of setiferous punctures, each with a granule at anterior edge, and two lateral intervals with punctures much more irregular and coarser than those in internal ones.

Pygidium weakly convex, covered with isodiametric microsculpture, closely punctate, the punctures often fused with one another, and each with a rather long seta. Male genitalia 1.32 mm in length, 0.64 mm in width, strongly bent at the border of basal piece and lateral lobes.

Legs ordinary in shape in the *Onthophagus*; male protibiae with three large and a small outer teeth; metatibial spur finely hooked at apex, ratios of the lengths of the metatibial spur and metatarsal segments: 0.79; 1.00, 0.26, 0.15, 0.12, 0.30.

Female. Unknown.

Body length: 4.4 mm.

Holotype: ♂, "Phukhieo wildlife sanctuary, Chaiyaphum Prov., NE. Thailand, Dung Trap: Pig Dung, Col: Chris DICKINSON" (EMKKU).

Notes. The present new species closely resembles the preceding new species, *Onthophagus* (*Onthophagus*) *tungkamungensis* sp. nov., but can be easily distinguished from the latter by the body more broadly oval, with the head wider and rounded, the pronotum broader, more convex laterad and with noticeable tubercles in front, and the elytra with intervals densely covered with granulate punctures.

The specific name is given after the district in Chaiyaphum Province where the holotype was collected.

***Onthophagus* (*Onthophagus*) *isanus* sp. nov.**

(Figs. 8, 25, 26)

Piceous, anterior margin of head, femora and tibiae brownish black, scape and funicle of antenna, mouth parts, gula, and proepisterna dark reddish brown, antennal clubs dusty yellow with feeble reddish tinge; head and anterior declivity of pronotum moderately shining with brassy lustre, major part of pronotum dully shining, elytra rather opaque and sericeous, prepisterna moderately shining, mesepisterna opaque, abdomen gently shining in major medial parts, rather alutaceous in lateral parts; pronotum and elytra rather densely covered with pale fine setae, ventral surfaces except for abdomen more or less haired or setiferous but indistinct, abdomen with rows of setae along each basal margin, and also with longer setae in lateral parts. Body ovate, strongly convex dorsad, gently flattened in posterior part, constricted between pronotum and elytra, obvisouly pronotum wider than elytra. Body oval, rather strongly convex dorsad, gently flattened in posterior parts, moderately constricted between pronotum and elytra.

Male. Head semicircular, gently inclined anteriad, scattered with microscopic punctures, which are intermixed with larger punctures; clypeus gently produced anteriad, with outer margin noticeably reflexed, fronto-clypeal border curved and weakly raised, clypeo-genal borders sulcate and reaching outer margins; ocular lobes somewhat triangular, depressed before eyes, with outer margins rounded and weakly reflexed; frons somewhat inverted triangular, with an obtuse tubercle at basal angle (at the middle of the border of vertex); vertex steeply inclined posteriad. Eyes crescent-shaped, rimmed along margins.

Pronotum wider than long (5 : 4); apical margin weakly emarginate, nearly straight widely in middle, finely margined; front angles subrectangular, not so sharply angulate at each corner, hind angles very obtuse, almost rounded; lateral margins moderately, roundly produced laterad, feebly sinuate before hind angles, weakly bordered and finely rimmed; base gently rounded, finely rimmed; disc strongly convex, declivous in front, with a pair of transverse impunctate tubercles at upper edge of the declivity, weakly depressed in basal 1/5 along midline, wholly covered with isodiametric microsculpture, closely punctate, each puncture with a suberect seta, sparsely scattered with minute punctures among the larger punctures.

Elytra wider than long (8 : 7); disc shallowly punctato-striate like chains; intervals feebly convex, covered with isodiametric microsculpture, 1st interval with a row of setiferous punctures, each with a granule at anterior edge, 2nd interval to 6th with two or three rows of setiferous punctures, each with a granule at anterior edge, and two lateral intervals with punctures becoming much more irregular and coarser than those in internal ones.

Pygidium gently convex, very weakly covered with isodiametric microsculpture, scattered with small punctures, each with a fine bent seta. Male genitalia 1.23 mm in length, 0.65 mm in width, strongly bent at the border of basal piece and lateral lobes.

Legs ordinary in shape; male protibiae with three large and a small outer teeth; ratios of the lengths of the metatibial spur of and metatarsal segments: 0.79; 1.00, 0.37, 0.26, 0.21, 0.44.

Female. Not known.

Body length: 5.4–6.1 mm.

Holotype: ♂, "Dry Evergreen Forest, Phukhieo wildlife sanctuary, Chaiyaphum Prov., Pig dung trap, 2. XII. 1998, Yupa HANBOONSONG leg." (EMKKU).

Notes. This new species also closely resembles the new species *O.* (*O.*) *tunkamungensis* sp. nov. in having common characteristics, a cephalic horn and a pair of pronotal granules, but can be distinguished from the latter by the head more transverse and more strongly punctate, the pronotum with sides less strongly convex laterad, thus, the lateral margins visible from above, the elytra with intervals more strongly granulate-punctate, and the pygidium more strongly convex.

The specific name is given after the Region "Isan", Northeast Thailand, where the holotype was collected.

***Onthophagus* (*Onthophagus*) *sangwalus* sp. nov.**

(Figs. 9, 27, 28)

Piceous, anterior part of head and legs dark reddish brown, antennal scape and funicle, mouth parts, gula and tarsi yellowish brown, head and pronotum with coppery tinge, elytra almost black, with a pair of yellowish patches near humeral callus, and often also with a pair of obscure patches in more interior and slightly posterior parts than humeral patches, antennal clubs covered with fine pale grayish hairs; head, pronotum and legs rather metallically shining, elytra, abdomen and legs gently shining, prepistena, metepisterna and metasternal shield rather alutaceous; head and pronotum almost glabrous, elytra covered with yellowish minute setae, proepisterna, metepisterna and metasternal shield covered with fine bent hairs, abdomen with bent setae along each basal margin. Body oval, moderately convex, weakly flattened in posterior parts, moderately constricted between pronotum and elytra.

Male. Head semicircular, gently inclined apicad, weakly covered with isodiametric microsculpture, closely punctate, weakly ridged along interior margins of eyes; clypeus gently dilated anteriad, sparsely scattered with larger punctures among smaller ones, rugulose in apical and lateral parts, with outer margin widely rounded and gently reflexed, fronto-clypeal border not defined, and feebly raised in the area around it, clypeo-genal borders finely sulcate, partly ridged and reaching outer margins; genae somewhat longitudinally elliptical, weakly depressed before eyes, coarsely punctate in interior parts of eyes; frons narrow and somewhat obtrapezoidal, finely punctate, gently raised towards a short transverse ridge, which lies at the midst of eye level; vertex (area behind the ridge) rather steeply inclined and sparsely scattered with small puncture. Eyes crescent-shaped, slightly larger than those of other *Onthophagus*.

Pronotum wider than long (7 : 4); apical margin gently emarginate, weakly producd in middle, feebly sinuous in lateral parts, wholly finely rimmed; front angles subrectangular, hind angles very obtuse; lateral margins produced laterad, slightly sinuate before hind angles, wholly finely rimmed, the rims visible from above; base gently, evenly rounded, wholly crenulate; disc strongly convex, rather densely punctate, the punctures somewhat ocellate, obviously larger and stronger than those on head, sparsely intermixed with minute punctures among larger ones, particularly distinctly so in anterior part.

Elytra almost as wide as long; disc finely but clearly punctato-striate, the punctures in striae small, hardly notching intervals; intervals feebly convex, with one (in 1st interval) or two rows (in 2nd to 7th) of small punctures (in two outer intervals, the rows becoming irregularly arranged), each with a fine seta and minute granule at the anterior face.

Pygidium gently convex, rather closely punctate, the punctures somewhat ocellate and with a rather long seta at each centre. Male genitalia 1.08 mm in length, 0.49 mm in width, very strongly bent between basal piece and lateral lobes.

Legs rather slender; male protibia with four outer teeth; metatibiae with terminal spur feebly hooked; ratios of the lengths of the metatibial spur and metatarsal segments: 0.69; 1.00, 0.34, 0.14, 0.11, 0.26.

Female. Head narrower, with posterior ridge wider and straight, pronotum less convex dorsad and narrower.

Body length: 4.8–7.2 mm.

Holotype: ♂, "Above Sangwal, Doi Suthep, Chiang Mai Prov., 1. XI. 06, N. Thailand, Hans Bänziger leg. (D-119)" (DEFACU). Paratypes: 1 ex., same data as the holotype; 5 exs., same locality and collector, 22. XI. 06, (D-120, 121, 125, 247, 250); 1 ex., 1. XII. 06 (D-122); 1 ex, 7. XII. 06, (D-123); 1ex., 2. XII. 06 (D-124); 3 exs., 2. XI. 2006 (D-245, 246); 2 exs., 7. XII. 2006, (D-249, 251); 1 ex., 28. XI. 2006 (D-248).

Notes. This new species somewhat resembles *Onthophagus* (*Paraphanaeomorphus*) *pun-*

neeae MASUMOTO, 1989, described from of the same locality as this new species, but can be distinguished from the latter by the smaller body (5.5–7 mm in *O. punneeae*), the male cephalic horn not developed but only swollen, the pronotum simply formed (steeply declivous anteriad with lateral margins of the declivity ridged in *O. punneeae*), the elytra each with a testaceous small spot on humeral callus (well developed three or four spots at base and apex in *O. punneeae*), and the lateral lobes of male genitalia obviously smaller and differently shaped in lateral view.

This new species also resembles *O.* (*O.*) *apunneeae* MASUMOTO *et al.*, 2007, originally described from "Namnao NP., Petchaboon Prov., NE. Thailand", but can be distinguished from the latter by the head closely punctate, with fronto-clypeal border with a traceable elevation, and also with a short transverse ridge instead of a cephalic horn in *O. apunneeae*, the pronotum more strongly punctate, without frontal declivity, the elytra with rows of punctures constantly arranged.

The specific epithet of this new species is derived from the type area, "Sangwal".

Onthophagus **(*Onthophagus*)** ***kaosoidowensis*** sp. nov.

(Figs. 10, 29, 30)

Brownish black, epipleura of elytra, prosternum and ventral surfaces of legs dark reddish brown, hairs on surfaces pale yellow to brownish yellow; head, pronotum and ventral surfaces of legs moderately shining, elytra, pro- and metasterna and abdomen weakly shining; each surface rather densely covered with rather short setae. Body subovate, rather strongly convex dorsad, flattened in posterior part, gently constricted between pronotum and elytra.

Male. Head somewhat longitudinally rhombic, almost flattened, very weakly covered with isodiametric microsculpture, scattered with microscopic punctures, which are sparsely intermixed with larger punctures, each with a long seta; clypeus strongly produced anteriad, with apical margin noticeably reflexed, fronto-clypeal border effaced, clypeo-genal borders finely sulcate and ridged; ocular lobes rather elongated ovate, weakly depressed in anterior parts of eyes, with outer margins gently roundly produced laterad and angulate; frons gently inclined anteriad, weakly ridged at the mid-level of eyes, the ridge gently curved posteriad in medial part; vertex with a low transverse swelling in medial part. Eyes medium-sized in dorsal view, crescent-shaped.

Pronotum wider than long (5 : 4), rather closely, strongly punctate, each puncture with a fine seta; anterior margin feebly and widely emarginate, very slightly produced anteriad in medial part, finely rimmed; base very widely triangular, finely rimmed, interior margin of the rim with a row of punctures; front angles rather acute, gently produced anteriad, hind angles obtusely angulate; lateral margins rather strongly, roundly produced, widest at anterior 2/5, gently sinuous before hind angles, wholly rimmed; disc strongly convex, weakly depressed postero-medial part, closely punctate, each with a fine seta, with a pair of round impunctate swellings near lateral margins, and also with a pair of ovate impunctate areas near hind angles.

Elytra slightly wider than long, shallowly punctato-striate, the punctures in striae small, rather closely set with each other and gently notching intervals; intervals gently convex, 1st interval with small punctures (smaller than those on pronotum and each with a fine seta) in row in posterior part, and also with minute punctures irregularly scattered, 2nd to 6th scattered with small punctures, which are partly in rows, partly irregularly set, and sometimes fused with one another, and 7th and 8th with punctures becoming more irregular and coarser.

Pygidium weakly convex, rather closely punctate, each puncture somewhat ocellate and with a long seta. Male genitalia 0.78 mm in length, 0.38 mm in width, bent at the border of basal piece and lateral lobes.

Legs rather slender; male protibia with four outer teeth, reducing in sizes from the apical to basal; metatibial spur slightly hooked at apex; ratios of the lengths of the metatibial spur of and metatarsal segments: 0.79; 1.00, 0.32, 0.16, 0.12, 0.31.

Female. Unknown.

Body length: 5.0 mm.

Holotype: ♂, "Kaosoidow wildlife sanctuary, Soidow, Chanthaburi Prov., 27. VII. 00, O. Soidow 2." (EMKKU).

Notes. The present new species is closely related to *Onthophagus* (*Onthophagus*) *kawaharai* OCHI et KON, 2007, originally described from Kalimantan, but can be easily distinguished from the latter by the pronotum more strongly convex and closely covered with strong setiferous punctures, the head in male strongly produced forwards, rather closely covered with double (coarse and fine) punctuations, and with a weak ridge at the mid-level of eyes, which is gently curved posteriad in the medial part, and also with an obtuse transverse swelling at the middle on the vertex.

The specific name is given after the place where the holotype was collected.

要　約

益本 仁雄・越智 輝雄・Y. HANBOONSONG: タイのエンマコガネ属 (*Onthophagus*) の新種ついて. 2. タイ各地のエンマコガネ属の 10 新種. —— タイ産食糞性コガネムシのエンマコガネ属 (*Onthophagus*) に関する研究シリーズの第2回として，タイ各地のエンマコガネ属の新種を10種記載した．すなわち *Onthophagus* (*Indachorius*) *chumphonensis* sp. nov.; *O.* (*O.*) *phatoensis* sp. nov.; *O.* (*Sunenaga*) *kaengkrachangus* sp. nov.; *O.* (*Furconthophagus*) *khonkaenus* sp. nov.; *O.* (*O.*) *wannamkieous* sp. nov.; *O.* (*O.*) *tungkamungensis* sp. nov.; *O.* (*O.*) *konsarnensis* sp. nov.; *O.* (*O.*) *isanus* sp. nov.; *O.* (*O.*) *sangwalus* sp. nov.; *O.* (*O.*) *kaosoidowensis* sp. nov. である．

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Ent. Rev. Japan, **62** (2): 273–277, January 30, 2008

Notes on the Bembidiinae (Coleoptera: Carabidae) of Japan
XIV. Two New Species of the Subgenus *Blepharoplataphus*

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Abstract Two new species belonging to the subgenus *Blepharoplataphus* are described from Southwest Japan under the name of *Bembidion* (*Blepheroplataphus*) *nirasawai* and *B*. (*B*.) *kimurai*. They are related to *Bembidion* (*Blepharopalataphus*) *hiogoense* BATES.

This paper deals with the result of my study on two species of the subgenus *Blepharoplataphus*, obtained on islands Yaku-shima, Amami-Ôshima and Okinawa-hontô in Southwest Japan.

The abbreviations used herein are as follows: L—body length, measured from apical margin of clypeus to apices of elytra; HW—greatest width of head; PW—greatest width of pronotum; GL—length of genae, measured along the mid-line; eL—length of eye, measured along the mid-line; PL—length of pronotum, measured along the mid-line; PA—width of pronotal apex; PB—width of pronotal base; EW—greatest width of elytra; EL—greatest length of elytra; M—arithmetic mean; NSMT—National Museum of Nature and Science, Tokyo.

I am deeply indebted to Mr. Noboru ITO for reading the original manuscript of this paper and to Dr. Toshio KISHIMOTO, Mrs. Sachiyo KARUBE and Messrs. Kôji ARAI, Masaaki KIMURA, Yûji TOMISHIMA, and Masataka YOSHIDA for supplying important materials for my study.

Bembidion (*Blepharoplataphus*) *nirasawai* MORITA, sp. nov.

[Japanese name: Yuwan-hirata-mizugiwa-gomimushi]

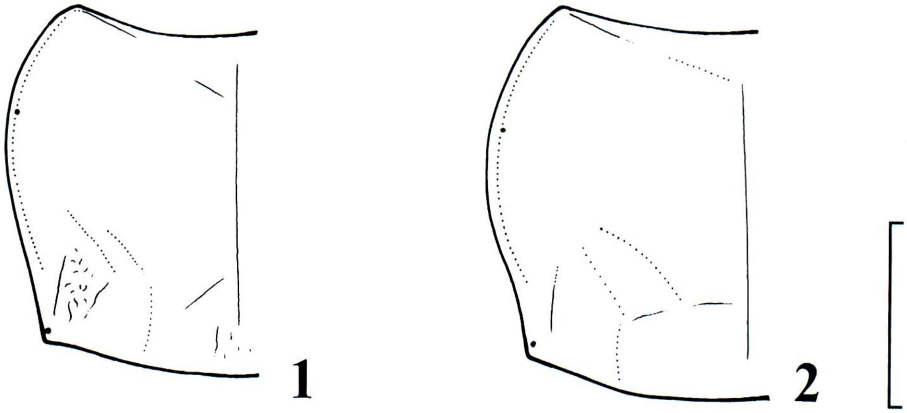
(Figs.1, 3)

Bembidion hiogoense: MORITA, 1987, Ent. Rev. Japan, Osaka, **42**: 69.

Diagnosis. Body rather convex, and with wide elytra; head and pronotum with bluish luster; hind angles of pronotum obtuse; PW/PL 1.45–1.51; elytral shoulders rounded.

Description. L: 4.28–5.15 mm. Body rather convex, and with wide elytra. Body black; head, pronotum and labrum with bluish lustre; elytra with dark brownish lustre; ventral side and epipleura blackish brown; antennal segments I, basal part of segment II and mandibles reddish brown to brown; mouth parts, rest of antennal segments and legs brown.

Head weakly convex; eyes moderately convex; PW/HW 1.21–1.29 (M 1.24) in ♂, 1.18 – 1.25 (M 1.23) in ♀; frontal furrows wide, very shallow, smooth, slightly divergent posteriad, and reaching at a level of basal 4/5 of eyes; frons and vertex smooth; anterior supraorbital pore foveolate, and situated at a little behind the mid-eye level; posterior ones situated at a little



Figs. 1–2. Out line of the left side of pronotum.——1, *Bembidion* (*Blepharoplataphus*) *nirasawai* MORITA, sp. nov.; 2, *B.* (*B.*) *kimurai* MORITA, sp. nov. (Scale: 0.5 mm.)

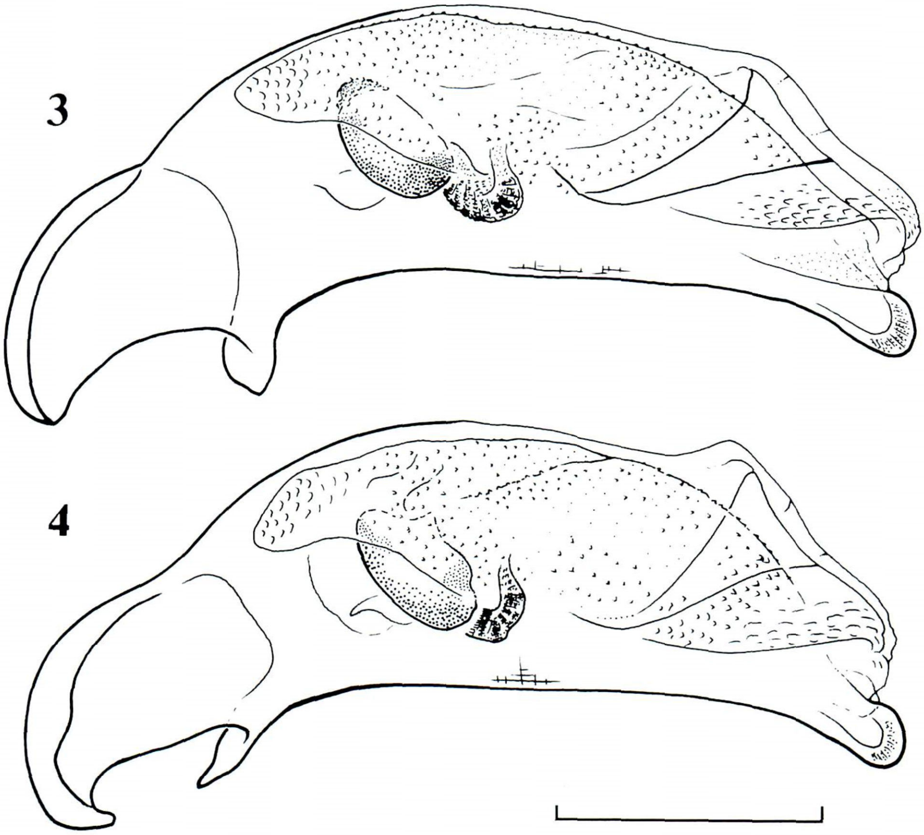
before the post eye level; microsculpture mostly consisting of isodiametric meshes, and the meshes wider on neck; genae invisible in dorsal view; relative lengths of antennal segments as follows:——I : II : III : IV : V : VI : XI ≒ 1 : 0.74 : 0.98 : 1.10 : 1.07 : 1.07 : 1.19 in ♂ and ♀.

Pronotum transverse and moderately convex; PW/PL 1.48–1.51 (M 1.49) in ♂, 1.45–1.49 (M 1.47) in ♀; apex moderately emarginate, with rather shallow gutters at the sides (here called apical gutters); anterior transverse impression vestigial or obliterated; PW/PA 1.38–1.47 (M 1.42) in ♂, 1.33–1.42 (M 1.39) in ♀; sides widely arcuate in front, and then weakly sinuate at about 1/5 from base, or convergent towards hind angles; side gutters rather shallow, wide and joining the apical gutters; PW/PB 1.16–1.22 (M 1.20) in ♂, 1.18–1.24 (M 1.20) in ♀; PA/PB 0.83–0.88 (M 0.85) in ♂, 0.85–0.91 (M 0.87) in ♀; median line variable in depth, rather wide, and clearly impressed between anterior and posterior transverse impressions; base weakly arcuate, and oblique at the sides; basal part with short and longitudinal wrinkles; apical angles moderately advanced, and blunt at the tips; hind ones obtuse, and with a long carina; basal foveae rather deep, and usually with irregular wrinkles; microsculpture consisting of wide to transverse meshes on the disc, and of isodiametric ones on the apical angles and basal part.

Elytra wide and moderately convex; EW/PW 1.61–1.73 (M 1.68) in ♂, 1.69–1.81 (M 1.72) in ♀; EL/EW 1.45–1.48 (M 1.46) in ♂, 1.35–1.50 (M 1.44) in ♀; shoulders convex and widely rounded; sides weakly arcuate towards the widest part and moderately so towards apices; apex of each elytron rounded, forming a small re-entrant angle at suture; intervals flat to weakly convex; striae 1–5 clearly impressed throughout, moderately punctate at basal part, becoming indistinct towards apical part, and vestigial near apex; striae 6 and 7 free at the apex; scutellar striole long, and usually weakly punctate or almost smooth; apical striole deep, not punctate, and joining stria 5; two dorsal pores situated on interval III, and joining stria 3 or rarely on the stria 3; anterior dorsal pore situated at basal 1/3–2/5 of elytra and posterior one at basal 7/10–3/4, respectively; microsculpture consisting of transverse meshes.

Ventral side almost smooth; sternites with short and longitudinal wrinkles; anal sternite weakly depressed in ♀.

Aedeagus rather elongate, almost straight in lateral view; apical lobe rather elongate, and



Figs. 3–4. Aedeagus, left lateral view.——3, *Bembidion* (*Blepharoplataphus*) *nirasawai* MORITA, sp. nov.; 4, *B.* (*B.*) *kimurai* MORITA, sp. nov. Scale: 0.3 mm.

rounded at the tip in lateral view. Inner sac covered with poorly sclerotized scales and armed mainly with two components of sclerites; oval sclerite heavily sclerotized; bundle of fibres elongate, and curved at ventral side of aedeagus, and situated at the right side of oval sclerite; ostium flag wide, elongate, and almost straight.

Left style provided with a long seta and one or three short seta(e) at apex, or two short setae at subapical part; right one provided with a long seta and a short seta at apex, and with two short setae at subapical part.

Type series. Holotype: ♂, allotype: ♀, Nishinakama, Riv. Sumiyô-gawa, 7. V. 1981, S. MORITA leg. (NSMT). Paratypes: 12♂♂, 24♀♀, Nishinakama, Riv. Sumiyô-gawa, 7. V. 1981, S. MORITA leg.; 3♂♂, 3♀♀, Shinkogachi, 7. III. 1993, S. NIRASAWA leg.; 4♂♂, 6♀♀, same locality, 9. III. 1993, S. NIRASAWA leg.; 1♂, 1♀, same locality, 8–9. III. 1993, T. KISHIMOTO leg.; 1♂, Mt.Yuwan-dake, 9. III. 1993, T. KISHIMOTO leg.; 4♂♂, 9♀♀, Hatsuno, Riv. Yakugachi, Sumiyô, 5. V. 1997, M. YOSHIDA leg.

Specimens examined. 3 ♀♀, Koseta, Yaku-shima Is., Kagoshima Pref., 23. XI. 1984, S. MORITA leg.

Range. Amami-Ôshima Is. and Yaku-shima Is., Kagoshima Prefecture, Southwest Japan.

Notes. Because of the similar structure of aedeagus, this new species is doubtless closely related to *B.* (*B.*) *hiogoense* BATES (1873, p. 302). It is, however, easily distinguished from the latter by the following points: 1) body larger and more convex; 2) head and pronotum with more strongly bluish lustre; 3) hind angles of pronotum obtuse; 4) PW/PL 1.48–1.51 (M 1.49) in ♂, 1.45–1.49 (M 1.47) in ♀; 5) elytral shoulders more strongly rounded. The standard ratios of body parts shown in the descriptive part are those of 4♂♂ and 6♀♀. [In 4♂♂ and 4♀♀ of *B* (*B.*) *hiogoense* BATES from Chûzenji-ko, Nikkô, Tochigi Pref., PW/PL 1.32–1.38 (M 1.35), 1.32–1.46 (M 1.38)].

Etymology. This new species is named after Mrs. Sachiyo KARUBE (=NIRASAWA) who kindly supplied me with the specimens of the type series.

***Bembidion* (*Blepharoplataphus*) *kimurai* MORITA, sp. nov.**

[Minami-hirata-mizugiwa-gomimushi]

(Figs. 2, 4)

Diagnosis. Body rather convex; head and pronotum with bluish lustre; elytral intervals weakly convex; elytral shoulders rounded.

Description. L: 4.42–4.72 mm. Body relatively small, rather convex, and with wide elytra.

Body black; head and pronotum with bluish lustre; ventral side and epipleura black; antennal segment I, basal part of segments II–IV reddish brown to brown; mouth parts, rest of antennal segments and legs brown.

Head weakly convex; eyes prominent; PW/HW 1.21–1.29 (M 1.25) in ♂, 1.23–1.26 (M 1.25) in ♀; frontal furrows wide, very shallow, smooth, parallel to each other, and reaching at a mid-eye level; frons and vertex smooth; anterior supraorbital pore foveolate, and situated at a mid-eye level; posterior ones situated at a little before the post eye level; genae very short, GL/eL 0.05; microsculpture consisting of isodiametric meshes; relative lengths of antennal segments as follows:——I : II : III : IV : V : VI : XI ≒ 1 : 0.74 : 0.96 : 0.99 : 1.07 : 1.04 : 1.20 in ♂ and ♀.

Pronotum transverse and moderately convex; PW/PL 1.42–1.46 (M 1.44) in ♂, 1.46–1.52 (M 1.49) in ♀; apex weakly to moderately emarginate; apical gutters rather deep and joining marginal gutters of sides; anterior transverse impression vestigial or obliterated; PW/PA 1.38–1.45 (M 1.43) in ♂, 1.37–1.45 (M 1.41) in ♀; sides widely and moderately arcuate in front, and weakly sinuate at about 1/4 from base, or convergent towards hind angles; side gutters rather shallow; PW/PB 1.19–1.21 (M 1.20) in ♂, 1.19–1.23 (M 1.21) in ♀; PA/PB 0.81–0.88 (M 0.84) in ♂, 0.84–0.88 (M 0.86) in ♀; median line clearly impressed, reaching neither apex nor base; base weakly arcuate, oblique at the sides; basal part usually smooth or rarely with short and longitudinal wrinkles; apical angles moderately advanced and blunt at the tips, hind ones obtuse, and with a long carina; basal foveae rather shallow, and usually smooth; microsculpture consisting of transverse meshes.

Elytra wide and moderately convex; EW/PW 1.65–1.73 (M 1.70) in ♂, 1.69–1.76 (M 1.71) in ♀; EL/EW 1.38–1.54 (M 1.44) in ♂, 1.38 –1.48 (M 1.43) in ♀; shoulders widely rounded; sides weakly arcuate towards the widest part and moderately so towards apices; apex of each elytron rounded, forming a small re-entrant angle at suture; intervals weakly convex; striae 1–5 clearly impressed throughout, and moderately punctate at basal part, but they become indistinct towards apical part, and are vestigial near apex; striae 6 and 7 free at the apex; scutellar striole long, moderately to weakly punctate; apical striole deep, not punctate, and joining stria 5; two dorsal pores situated on interval III, and joining stria 3; anterior dorsal pore situated at basal 7/20–2/5 of elytra and posterior one at basal 13/20–3/4, respectively; microsculpture consisting of transverse meshes.

Ventral side almost smooth; sternites with short and longitudinal wrinkles; in ♀, anal sternite weakly depressed.

Aedeagus similar in basic structure to that of the preceding new species; aedeagus rather elongate, almost straight in lateral view; apical lobe rather short, and rounded at the tip in lateral view. Inner sac covered with poorly sclerotized scales and armed mainly with two components of sclerites; oval sclerite heavily sclerotized; bundle of fibres elongate, and curved at ventral side of aedeagus, and situated at the right side of oval sclerite; ostium flag wide, elongate and almost straight.

Left style provided with a long seta and one or three short setae at apex, and two short setae at subapical part; right one provided with a long seta and one short seta at apex and with two short setae at subapical part.

Type series. Holotype: ♂, (NSMT); allotype: ♀, Hiji, Kunigami-son, 19. III. 1997, K. TOYODA leg. Paratypes: 3♀♀, Yona, Kunigami-son, 27. III. 1995, M. KIMURA leg.; 4♂♂, 4♀♀, Hiji, Kunigami-son, 19. III. 1997, K. TOYODA leg.

Range. Okinawa-hontô Is., Southwest Japan.

Notes. Evidently, this new species is closely related to the preceding new species. It is, however, distinguished from the latter by the following points: 1) basal foveae of pronotum deeper; 2) elytral shoulders more rounded; 3) elytral sides more arcuate; and 4) elytral intervals more convex.

Etymology. This new species is named after Mr. Masaaki KIMURA who kindly supplied me with the specimens of the type series.

要　　約

森田 誠司：日本産ミズギワゴミムシ類の知見．XIV．ヒョウゴミズギワゴミムシ亜属の2新種.——ヒョウゴミズギワゴミムシ亜属に所属する2新種を，奄美大島，屋久島，及び沖縄本島から採集された標本を基に，*Bembidion nirasawai* ユワンヒラタミズギワゴミムシ，*B. kimurai* ミナミヒラタミズギワゴミムシと命名，記載した．

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原稿作成の要領

1. 原稿はプリントアウトしたもの２部（１部はコピー可）と，CD，MO，フロッピーディスクに保存したMS-Word形式またはテキスト形式のデータを提出する．用紙はＡ４判を用い，左右に3 cmの余白をあけ，行間はダブルスペースとする．表題，見出し，人名など，いかなる場合も大文字だけでは入力しない．また和文要約および♂♀記号を除いて日本語フォントを用いてはならない．
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5. 参考文献は著者名のアルファベット順に並べ，雑誌名は略さずフルタイトルで表記する．

   Blackwelder, R. E., 1936. Morphology of the coleopterous family Staphylinidae. Smithsonian miscellaneous Collections, **94** (13): 1–102

   Blackwelder, R. E., 1952. The generic names of the beetle family Staphylinidae with an essay on genotypy. Bulletin of United States National Museum, **200**: i-iv+1–483.

   Müler, J., 1925. Terzo contributo alla conoscenza del genere Staphylinus L. Bollettino Societa entomologica Italiana, **57**: 40–48.
6. 標本のデータは以下のように表記する．

   （例）3♂♂, 2♀♀, Amaishi, Hyôgo, 28. V. 1995, Y. Hayashi leg.
7. 図（線画）は耐水性黒色インクで鮮明に描き，そのまま印刷出来るようにする．写真はプリントした鮮明なものを台紙に貼り付ける．図の拡大（縮小）率を示したい場合は図中にスケールを入れる．原図には薄紙のカバーをかけ，これに著者名，図の番号，上の方向を示す．もし図中に文字を入れる場合には，カバーの指定位置に赤字で示す．原図の大きさは，台紙を含めてＡ４判（210 mm × 295 mm）以内とする．また原図の返送が必要な場合は，カバーにその旨を記入する．
8. 図をデータ入稿する場合はAdobe Photoshop，Adobe Illustrator，EPS，TIFF，PICT，JPEGなどの各形式にて，写真は350 dpiのグレーまたはカラーモードで，線画は800～1800 dpiのモノクロ２階調モードで作成する．それぞれ刷り上がり希望サイズに調整して作成するが，最終的な縮尺は編集部に一任されたい．図をデータ入稿する場合も，かならずプリントアウトを添付すること．

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